Redevelopment Agency
of the City of Warner Robins, Georgia

Georgia Robins Aerospace Maintenance Partnership (G-RAMP)

Draft Final
Environmental Assessment

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Prepared for the Redevelopment Agency of the City of Warner Robins, Georgia

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EXECUTIVE SUMMARY

The City of Warner Robins (the City) conducted this Environmental Assessment (EA) to identify and assess potential effects of the Proposed Action, which would consist of the construction and operation of the Georgia Robins Aerospace Maintenance Partnership (G-RAMP) project. This EA evaluated the environmental consequences of implementing the Proposed Action and No Action Alternative. As described below, no reasonable alternatives to the Proposed Action were identified.

The City proposes to construct the G-RAMP project, which would be a multifaceted partnership between Robins Air Force Base (RAFB) and the community for construction of a new aerospace industrial complex. G-RAMP would be a collaborative effort that would include the City, the Middle Georgia community, private industry, and the Warner Robins Air Logistics Complex (AFSC) to integrate U.S. Air Force (USAF) and private sector sustainment capabilities. The City and AFSC entered into a Strategic Partnership Agreement in 2008 to integrate public and private maintenance and repair operations and to jointly manage and execute aircraft sustainment and shared sustainment capabilities, including education, training, technology, and infrastructure opportunities.

The purpose of the Proposed Action is to improve support to the war fighter by pursuing opportunities to enhance the capability and capacity at AFSC. This would be accomplished by fostering cooperation between the City and AFSC, identifying/developing technology for use by involved parties, facilitating innovation and transformation by identifying potential projects and target areas for improvement and opportunities, and leveraging the synergy created by developing public and private capabilities and collaboration.

The need for the Proposed Action is to meet contracting and workload constraints. More specifically, the project is needed to provide opportunities for meeting the workload capacity/capability requirements of AFSC, to overcome facilities constraints at AFSC, to reduce costs of facilities ownership for involved parties, and to reduce costs of products produced or maintained at such facilities. As stated in Title 10 U.S. Code Section 2466, Subsection (c), "Not more than 50 percent of the funds made available in a fiscal year to a military department or a Defense Agency for depot-level maintenance and repair workload may be used to contract for the performance by non-Federal Government personnel of such workload for the military department or the Defense Agency. Any such funds that are not used for such a contract shall be used for the performance of depot-level maintenance and repair workload by employees of the Department of Defense." As a result, USAF is responsible for the organic/core workload and the work that cannot be completed through contract. The remaining workload would be taken by private industry groups. Other constraints include the lack of facilities on RAFB to perform aircraft maintenance, repair, and overhaul work and the inability of private industry to use the existing RAFB back shops and support capabilities. Creating Public-private Partnerships (PPPs) would allow RAFB to gain significant improvements while maintaining the strength of the

existing industry operations. However, RAFB must overcome facility constraints to achieve the efficiencies afforded by shared sustainment capability. Building the proposed G-RAMP facilities on City-owned land next to RAFB would allow RAFB to create the co-located PPP and to benefit from the sharing of sustainment capabilities.

The G-RAMP site (herein referred to as "the Project Site") is located on ±24.5 acres next to the northeast end of RAFB, and is owned by the City. The Project Site is vacant. Historically, since the late 1950s, the City-owned area immediately east of the Project Site has been used for soil borrowing for construction of RAFB projects. Disturbance to surface soils and vegetation occurred on the Project Site as a result of this activity. In addition, an approximate 1-acre cemetery tract is located next to the Project Site near the southern boundary. The City owns the cemetery property and will place a 50-foot buffer around the cemetery's perimeter so that it will remain undisturbed during project implementation. Next to the cemetery is a small concentration of bricks and stones that may be remnants of a farmhouse and approximately 5 acres of overgrown pecan orchard. The City's Ocmulgee River Water Pollution Control Facility No. 1 is located next to the northwest corner of the Project Site. A small portion of the Project Site is located within the 100-year floodplain of the Ocmulgee River.

The Proposed Action would involve construction of an aerospace industrial complex, including hangar facilities, ramp space, public infrastructure, and office/professional space for program management. The Proposed Action would use certain RAFB assets to reduce the overall project cost, including the airfield operations, a taxiway connection, and a secured entrance to the base and North Perimeter Road. Improvements would consist of site preparation and grading, infrastructure improvements such as water and sanitary sewer systems to serve the facility, development of a taxiway extension/connection to RAFB, aircraft parking areas, a vehicular access road, and construction of hangar facilities to support RAFB and private contractors. Because the exact footprint of the Proposed Action is not fully known at this time, it is assumed that the 24.5-acre Project Site would be developed. Approximately 450,000 cubic yards of earthwork is anticipated to be moved during site development (mass grading). The site will be graded to allow a finished floor elevation of approximately 266 feet above mean sea level (AMSL), as recommended in the *Preliminary Engineering Report* (Carter & Sloope 2009).

Under the No Action Alternative, construction of the G-RAMP facilities would not occur. There would be no shared assets or shared sustainment and operational capabilities between AFSC and private industry. Therefore, there would be no reduction of costs or increase in aircraft availability. Under the No Action Alternative, aerospace-related jobs would not be created and the Middle Georgia community would not receive economic benefit. The No Action Alternative would not result in significant adverse direct or indirect effects on environmental resource components (Tables ES-1 and 2-1).

No reasonable alternatives to the Proposed Action that would be implementable and meet the purpose, need, and objectives for the action were identified. No other City-owned properties that

would allow immediate access to the taxiways on RAFB are located along RAFB. This immediate access is needed to allow shared sustainment capabilities between RAFB and the proposed G-RAMP facilities. The Proposed Action represents the minimum area of impact to meet the purpose and need for the action. Therefore, the Proposed Action is the Preferred Alternative, and no other action alternatives are evaluated in detail in this EA.

Implementation of the Proposed Action would result in insignificant adverse effects on topography due to grading, with minor effects on stormwater, floodplains, air quality, hazardous/toxic material generation, noise, the biological environment, and transportation. These effects would be largely managed through avoidance or adherence to appropriate local, state, or federal laws and regulations. Impacts to wetlands are not anticipated; however, in the unlikely event that impacts to adjacent wetlands would be deemed necessary during construction activities, the activities would be reduced and would require coordination with the U.S. Army Corps of Engineers (USACE) for permitting and mitigation before ground disturbing within such wetlands. The access route owned by the City into the G-RAMP area follows the present City route of a dirt road to the City water treatment facility. The road crossed the base to the north of the runway, and extends along a route outside the base along the eastern perimeter. The dirt road is above the wetlands/floodplains that are adjacent to the G-RAMP site. Activities related to construction of improvements and vehicular traffic on the road may be expected to expand along the edges of the road into the adjacent wetlands/floodplains. The impacts would be limited to this extent, and would present substantially fewer impacts than might be expected from building a new road through the wetlands/floodplains.

Archeological resource surveys (Garrow 1996; CRA 2011) of the Project Site determined that there are no sites potentially eligible for listing on the National Register of Historic Places (NRHP). Should human remains be identified at locations within the area of potential effects (APE) during construction/excavation activities, such activities would cease. As part of 36CFR800.13 (b), construction personnel would be directed to avoid the site of discovery and immediately contact the City. Work in the discovery area would stop until the Project Site could be investigated. The City would coordinate with RAFB to send a qualified representative to visit the discovery site, the resource would be recorded and evaluated, and the effects would be managed as necessary.

The Proposed Action would not generate disproportionate adverse human or environmental health impacts on minority or low income populations. No adverse socioeconomic impacts on military or regional populations, the economy, employment, income, housing, community services, or education would result from implementation of the Proposed Action. However, project implementation would result in positive socioeconomic impacts by providing additional economic stimulus to the Middle Georgia region.

Table ES-1 summarizes the project's potential impacts, management actions or Best Management Practices (BMPs), and proposed mitigation measures to be implemented where appropriate.

Cumulative impacts on the environment from the incremental impact of the Proposed Action, when added to other past, present, and reasonably foreseeable future actions, also were evaluated and found to be insignificant.

Table ES-1 Summary of Potential Impacts, Management Actions or BMPs, and Mitigation Measures

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Topography	▪ No change to existing conditions.	▪ The Project Site would be graded. Approximately 450,000 cubic yards of earthwork (cut/fill) is anticipated. Excavation would be required in the area of Joint Stars Road for the taxiway connection and for the proposed access road. Minor ground disturbance would be required for the replacement of the 6-inch water supply main. ▪ A Land Disturbing Activity Permit would be obtained from Houston County. The permit would include a Notice of Intent for permit coverage under National Pollutant Discharge Elimination System (NPDES) Permit GAR100001 (approval to discharge stormwater associated with construction activity). As required by the NPDES permit, an Erosion, Sediment, and Pollution Control Plan (ESPCP) would be developed and implemented.	▪ The construction fill and topsoil would be obtained from either the Project Site or an existing commercial source fully permitted under applicable laws protecting the environment.	▪ None needed.
Surface Waters	▪ No change to existing conditions.	▪ Implementation of the Proposed Action would not result in either significant adverse or positive effects on surface waters because construction activities would not occur in or next to natural surface water bodies.	▪ BMPs such as silt fencing, hay bales, and erosion control blankets would be used during construction to control land disturbance and stormwater runoff.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Floodplains and Wetlands	▪ No change to existing conditions.	▪ The Proposed Action could fill a small portion of the floodplain within the Project Site. Filling the floodplain would not significantly alter flood elevations. No other construction activities (e.g. access route, water supply main route) occur within the floodplain. ▪ The Proposed Action is not anticipated to impact wetland features. Wetlands would be avoided to the extent possible. ▪ Land disturbance permits would be required, as described in Section 4.1.1.	▪ Before activity, the City must evaluate and approve this action, while USAF must investigate the potential alternatives that would avoid working within the floodplain. ▪ Although not anticipated, impacts to adjacent jurisdictional wetland areas would require a Pre-construction Notification (PCN) to be prepared/submitted before ground disturbing activities. ▪ Impacts to the floodplain would require a Letter of Map Revision from the City to the Federal Emergency Management Agency.	▪ If necessary as part of PCN submittal, mitigation for impacts on wetlands would be documented. Proposed wetland mitigation would likely consist of the purchase of mitigation credits from a USACE-approved wetland mitigation bank.
Stormwater	▪ No change to existing conditions.	▪ Implementation of the Proposed Action would result in an increase in the volume of stormwater runoff because construction activities would increase the impervious surface within the Project Site. ▪ NPDES Permit GAR100001 (approval to discharge stormwater associated with construction activity) would be obtained. As a part of the NPDES permit, an ESPCP would be prepared and submitted. ▪ A storm drainage collection system is proposed to collect surface drainage from the Project Site. The storm sewer system would include drop inlet structures, trench drains, and connecting storm sewer piping. The piping system would discharge the stormwater into a proposed stormwater treatment pond.	▪ BMPs for protecting surface water from sedimentation effects would be in place during construction. ▪ Construction design of the proposed stormwater treatment pond would require consideration of 11 minimum standards outlined in the *Georgia Stormwater Management Manual* (Appendix C). ▪ The Proposed Action would comply with Section 438 of the 2007 Energy Independence and Security Act requiring use of low-impact development techniques during construction.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Geology and Soils	▪ No change to soils or the existing geologic environment.	▪ Implementation of the Proposed Action would not result in significant adverse or positive effects on geologic features because construction activities would occur at or near the ground surface.	▪ BMPs applied during construction activities, such as silt fencing, hay bales, and erosion blankets, would control soil erosion and avoid significant adverse effects on the quality of stormwater runoff.	▪ None needed.
Groundwater	▪ No change to existing conditions.	▪ Project implementation is not anticipated to adversely affect groundwater resources because subsurface water levels were determined to be below current elevations and would not be disturbed.	▪ Not applicable.	▪ None needed.
Water Supply and Drinking Water	▪ No changes to existing resources.	▪ Implementation of the Proposed Action would not adversely affect the existing local water supply because the supply would not experience significant impacts.	▪ Not applicable.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Air Quality	▪ No change to existing conditions.	▪ Construction activities would temporarily increase emissions of carbon monoxide, hydrocarbons, and nitrogen dioxide. ▪ Implementation of the Proposed Action would increase air emissions because there would be increased emissions from employee personal vehicles and potentially from painting and de-painting operations, solvent cleaning, and chromium plating and anodizing. Other potential sources would include fuel storage tanks, peaking power generators, boilers, and various sources of fugitive volatile organic compounds. Project implementation (maintenance, repair, and operations work on up to two C-17 or C-5 aircraft) is not expected to significantly impact air quality in the region.	▪ Air quality BMPs would be implemented during construction and would include emissions standards for construction equipment and procedures for wetting disturbed portions of the project areas to control dust emissions. ▪ It is anticipated that the amount of emissions would not result in violations of National Ambient Air Quality Standards. ▪ If PTE emissions of $PM_{2.5}$, PM_{10}, SO_2, CO, NO_x, or VOC exceed 100 tons per year or if total HAPs exceed 25 tons per year, or an individual HAP PTE exceeds 10 tons per year, a major source Title V operating permit must be obtained.	▪ None needed.
Wastewater	▪ No change to existing conditions.	▪ Based on assumption of 150 new employees at the Project Site, no significant impacts on the City's Ocmulgee River Wastewater Treatment Plant No. 1 are anticipated based on the plant's capacity of 3 million gallons per day (MGD) and the current operating average of approximately 1.2 to 1.5 MGD. ▪ It is not anticipated that industrial wastewater would be generated at the proposed facilities.	▪ Generated industrial wastewater would comply with the City's Wastewater Pretreatment Program for industrial discharges. ▪ Should industrial wastewater be generated at the Proposed Project, such wastewater would be in compliance with the City's Wastewater Pretreatment Program for industrial dischargers.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Solid Waste	▪ No change to existing conditions.	▪ Generated solid waste would be similar in amount and type to that generated by similar operations at RAFB, and would be insignificant considering the population in the Warner Robins Metropolitan Statistical Area and the number of personnel at RAFB.	▪ Solid wastes would be recycled to the extent possible, and waste materials containing polychlorinated biphenyls (PCBs), asbestos, or lead would be handled in accordance with applicable regulations.	▪ None needed.
Hazardous Materials and Waste	▪ No change in current generation of wastes.	▪ The Proposed Action may result in the generation of hazardous wastes including petroleum products, such as hydraulic fluid mixed with used oil and hydraulic fluid mixed with solvent. Hazardous waste generation is anticipated to be comparable to that of existing hangar facilities at RAFB.	▪ Generated hazardous waste would be managed and disposed of pursuant to the Resource Conservation and Recovery Act (RCRA) (Title 40 Code of Federal Regulations [CFR] Part 262) and Georgia Rule 391-3-11, and stored and handled in accordance with Occupational Safety and Health Administration (OSHA) regulations, 29 CFR 1910.1200(e)-(h). ▪ Under RCRA, hazardous waste generators are required to notify the Georgia Environmental Protection Division of regulated waste activities. The hazardous waste generator would be required to obtain a U.S. Environmental Protection Agency (USEPA) Identification Number by completing and submitting USEPA Form 8700-12 for initial notifications. ▪ A storage permit is not required for storage of hazardous waste under 90 days.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Toxic Materials	▪ Asbestos-containing material (ACM) or lead-based paint (LBP) is unlikely to be present within the location of an old abandoned home site on the Project Site. PCB-containing materials are not present on the Project Site.	▪ Implementation of the Proposed Action would have no significant adverse or positive effects on toxic materials or toxic waste, or the environment as it relates to these materials. Operation of the hangar facilities would not involve the use of equipment containing PCBs, ACM, or LBP.	▪ ACM or LBP within remnants of the abandoned home would be assessed by pre-demolition inspections/surveys. If susceptible materials are encountered, these materials would be tested and characterized, and if identified as ACM or LBP the toxic materials or waste would be removed, managed, and disposed of in accordance with applicable regulations.	▪ None needed.
Noise Environment	▪ No change to existing conditions.	▪ Construction would occur in and near the elevated noise environment of the flight line area (Taxiway E) or along existing roadways (access route and water supply main route). ▪ Noise from future operations at the new hangar facilities would be generally consistent with noise from existing and surrounding operations. Personnel at the new facilities would be exposed to noise from the aircraft at the Project Site, from surrounding streets, and from the nearby airfield at RAFB.	▪ Construction near receptors within City limits would abide the City's noise ordinance. ▪ Construction personnel would wear ear protection in accordance with U.S. Department of Defense (DoD) and OSHA health and safety requirements. ▪ Personnel would expect elevated noise levels and would be protected in accordance with DoD and OSHA health and safety requirements.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Biological Environment	▪ No change to existing conditions.	▪ Implementation of the Proposed Action would not result in adverse effects on endangered, threatened, or sensitive species because these species are not expected to occur. Habitats supporting these species are not present within the Project Site or along the access route/water supply main route; however, potential habitat for some species is located next to the Project Site. The alligator snapping turtle has not been observed on the Project Site and the likelihood for occurrence is highly unlikely as it has not been recorded in Houston County. Bald eagles and wood storks have been previously observed at RAFB or on/near the Project Site, but do not nest or roost on the Project Site. ▪ Impacts on common wildlife species would include an increase in noise and traffic, and loss of habitat. The Project Site is highly disturbed from historical soil borrowing, logging, and clearing activities that occurred either on site or next to the site. Therefore, high-quality habitat and significant vegetation and wildlife resources are not present throughout most of the Project Site.	▪ If protected species are observed during construction, construction activities in the immediate vicinity would cease, and the construction manager would immediately contact the City. The City would coordinate with RAFB and send a qualified representative to visit the discovery site, the resource would be recorded and evaluated, and appropriate avoidance measures would be implemented as necessary.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Cultural Resources	▪ No change to existing conditions.	▪ No sites potentially eligible for listing on the NRHP have been identified on the Project Site. Therefore, implementation of the Proposed Action would not result in significant adverse or positive effects on cultural resources within the Project Site. ▪ The Proposed Action has been fully coordinated under provisions of the National Historic Preservation Act, Section 106.	▪ Should human remains be identified during construction, excavation activities would cease and plans would be developed to address the discovery. ▪ While not an eligible NRHP site, the Wellston cemetery would be protected from disturbance with a 50-foot undisturbed buffer and a new permanent fence that would be installed before construction.	▪ None needed.
Socioeconomic Environment	▪ No change to existing conditions.	▪ The Proposed Action would provide additional economic stimulus to the Middle Georgia region, resulting in positive impacts on the socioeconomic environment, including creation of up to 150 new jobs at the new facility. ▪ No adverse disproportionate effects on minority or low-income populations would occur.	▪ Not applicable.	▪ None needed.
Transportation	▪ No change to existing conditions.	▪ There would be a temporary, insignificant increase in traffic from construction vehicles, including trucks hauling clean fill material to be placed on the Project Site. ▪ Traffic may be a temporary, insignificant impact during replacement of the water supply main. ▪ The number of additional personnel (up to 150 new jobs) is anticipated to be insignificant considering the existing traffic from the approximately 25,584 people who access RAFB daily.	▪ The City would jointly develop and coordinate a Construction Vehicle Traffic Plan with airport users, air traffic control, and the appropriate construction engineers and contractors.	▪ None needed.

Resource Area	No Action Alternative	Proposed Action	Management Actions or Best Management Practices To Be Implemented	Mitigation Measures To Be Implemented
Safety	▪ No change to existing conditions.	▪ The Proposed Action would have no significant adverse or positive effect on safety.	▪ USAF personnel working at the Project Site are protected by observing OSHA, Air Force Occupational Safety and Health (AFOSH) standards, and RCRA. Non-military personnel would also be protected by observing OSHA regulations. ▪ Aircraft flight operations and patterns associated with RAFB would be conducted in accordance with RAFB's flight operation and safety procedures.	▪ None needed.

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ACRONYMS

ACM	Asbestos-containing Material
ACW	Air Control Wing
AFSC	Warner Robins Air Logistics Complex
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
AMSL	Mean Sea Level
APE	Area of Potential Effects
BEA	Bureau of Economic Analysis, U.S.
BMPs	Best Management Practices
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CRA	Cultural Resources Analysts, Inc.
CWA	Clean Water Act
CZ	Clear Zone
dB	Decibels
DNL	Day-Night Average Noise Level
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
ESA	Environmental Site Assessment
ESPCP	Erosion, Sediment, and Pollution Control Plan
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FONPA	Finding of No Practicable Alternative
GA EPD	Georgia Environmental Protection Division
GCZ	Graded Clear Zone
GDNR	Georgia Department of Natural Resources
GHG	Greenhouse Gas
G-RAMP	Georgia Robins Aerospace Maintenance Partnership
GSWCC	Georgia Soil and Water Conservation Commission
HAP	Hazardous Air Pollutant
HPD	Historic Preservation Division
HUC	Hydrologic Unit Code

ACRONYMS (Continued)

ILCM	Integrated Life Cycle Management
INRMP	Integrated Natural Resources Management Plan
IP	Individual Permit
ISWM	Integrated Solid Waste Management
JD	Jurisdiction Determination
LBP	Lead-based Paint
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
LiDAR	Light Detection and Ranging
LOMR	Letter of Map Revision
MEK	Methyl Ethyl Ketone
MGD	Million Gallons per Day
MIBK	Methyl Isobutyl Ketone
MRO	Maintenance Repair and Overhaul
MSA	Metropolitan Statistical Area
MSG	Mission Support Group
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NOD	Notice of Decision
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O_3	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCBs	Polychlorinated Biphenyls
PCN	Pre-Construction Notification
PM	Particulate Matter
$PM_{2.5}$	Particles with Diameters of 2.5 Micrometers or Less
PM_{10}	Particles with Diameters of 10 Micrometers or less
PPP	Public-Private Partnerships
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RAFB	Robins Air Force Base

ACRONYMS (Continued)

RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
ROW	Right-of-Way
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TCE	Trichloroethylene
the City	City of Warner Robins
the Project Site	the G-RAMP site
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USC	U.S. Code
USCB	U.S. Census Bureau
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOCs	Volatile organic compounds
WTE	Waste-to-Energy

1.0 INTRODUCTION, PURPOSE AND NEED FOR ACTION

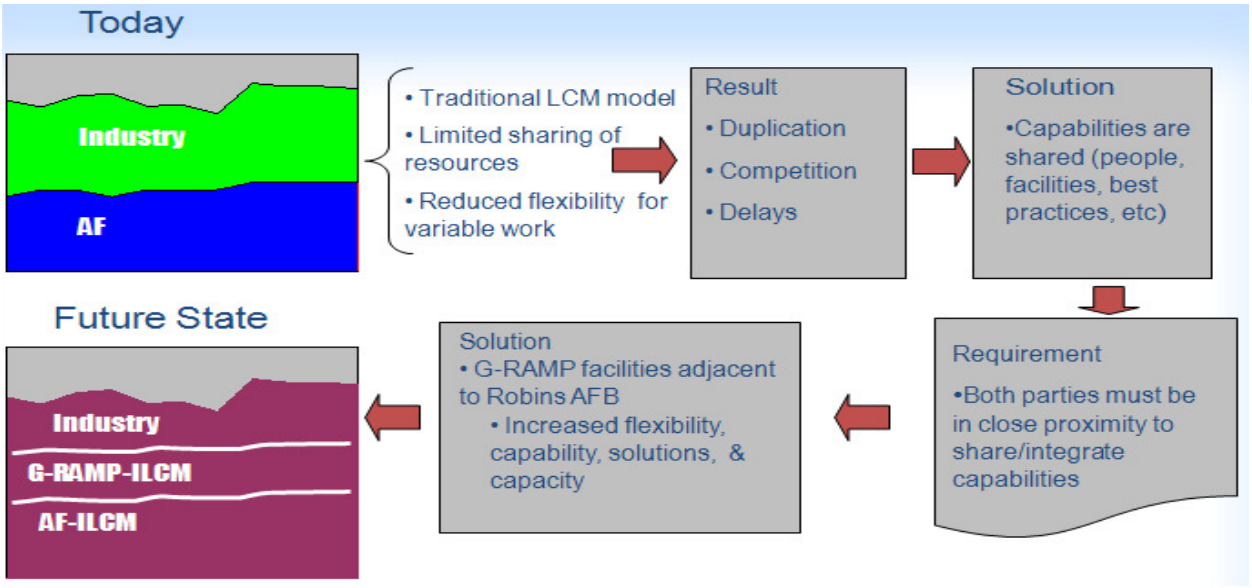
1.1 Introduction

This Environmental Assessment (EA) was prepared to assess the predicted environmental impacts associated with the proposed Georgia Robins Aerospace Maintenance Partnership (G-RAMP) project (Proposed Action). G-RAMP is a multifaceted partnership between Robins Air Force Base (RAFB) and the community for construction of a new aerospace industrial complex. This is a collaborative effort that includes the City of Warner Robins (the City), the U.S. Department of Defense (DoD), the Middle Georgia Regional Development Center, the Houston County Board of Commissioners, 21st Century Partnership, the Houston County Development Authority, and private sector partners. The City acquired ±544 acres next to the north end of RAFB through a land swap with the State of Georgia. On a preliminary basis, the City determined that ±24.5 acres closest to RAFB would be the most suitable for development. The Proposed Action would involve construction of an aerospace industrial complex, including hangar facilities, ramp space, public infrastructure, and office/professional space for program management.

The City and the Warner Robins Air Logistics Complex (AFSC) entered into a Strategic Partnership Agreement on July 22, 2008, to integrate public and private maintenance and repair operations and to jointly manage and execute aircraft sustainment and shared sustainment capabilities, including education, training, technology, and infrastructure opportunities. The G-RAMP complex would facilitate the Public-private Partnership (PPP) between AFSC and private industry to share weapons system sustainment capabilities, thereby improving aircraft availability and reducing costs. The complex would be used for aircraft maintenance, repair, and overhaul (MRO) activities.

G-RAMP offers the opportunity for partnership between the State of Georgia, the Middle Georgia community, private industry, and AFSC to integrate USAF and private sector sustainment capabilities by providing more efficient and economical support of the war fighter. It is based on the premise that there is a better way to perform integrated life cycle management (ILCM) based on shared capacity and capability. Candidate G-RAMP workload includes, but is not limited to, on-aircraft maintenance for USAF, Army, Navy, and Marines; aircraft modification design and installation; overflow aircraft depot-level maintenance; and other related aircraft maintenance from Foreign Military Sales and Special Operations Command Requirements. G-RAMP may include organic (military, non-private sector resources) and non-organic workload on various aircraft, including, but not limited to, C-130, C-17, and C-5 aircraft.

The following chart developed by AFSC summarizes the G-RAMP concept:



As stated in Title 10 U.S. Code (USC) Section 2466, Subsection (c), "Not more than 50 percent of the funds made available in a fiscal year to a military department or a Defense Agency for depot-level maintenance and repair workload may be used to contract for the performance by non-Federal Government personnel of such workload for the military department or the Defense Agency. Any such funds that are not used for such a contract shall be used for the performance of depot-level maintenance and repair workload by employees of the Department of Defense." As such, USAF is responsible for the organic/core workload and the work that cannot be completed through contract. Workload exceeding the capacity/capability of AFSC is typically contracted to private sector industry. Other constraints include the lack of facilities at RAFB to perform MRO work and the inability of private industry to use the existing RAFB back shops and support capabilities. Creating PPPs would allow RAFB to gain significant improvements while maintaining the strength of the existing industry operations. However, RAFB must overcome facility constraints to achieve the efficiencies afforded by shared sustainment capability. Building the proposed G-RAMP facilities on City-owned land next to RAFB would allow RAFB to create the co-located PPP and to benefit from the sharing of sustainment capabilities.

The Proposed Action would be consistent with the State of Georgia's strategic industries and the development of the "aerospace corridor" in Georgia. Today, there are more than 84,500 Georgians employed in the aerospace industry, with an annual aerospace payroll of $5.2 billion (2009). Georgia's diverse aerospace industry features more than 500 organizations that specialize in the facets of aerospace: research and development, original equipment manufacturers, MRO companies, and global aircraft fleet operations. AFSC is the largest industrial complex in Georgia, with an estimated economic impact of $4.1 billion annually.

In summary, benefits from the Proposed Action would include the following:

- Enable compliance with DoD and Air Force Materiel Command guidance on PPPs
- Increase aircraft availability
- Reduce operational and sustainment costs
- Create capacity for new workloads at AFSC
- Improve depot maintenance productivity
- Enable improved ILCM
- Maintain DoD and commercial industrial base viability
- Create jobs
- Foster regional economic growth and stability

This EA was prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, which requires federal agencies to consider environmental impacts in their decision-making process. This EA evaluates the potential for environmental consequences of the Proposed Action associated with the development of the G-RAMP facilities next to RAFB, in accordance with the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 Code of Federal Regulations [CFR] 1500-1508) and U.S. Air Force (USAF) regulations for the Environmental Impact Analysis Process (32 CFR 989). These federal regulations establish the administrative process and substantive scope of the environmental impact evaluation, designed so that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

The purpose of this EA is to determine whether the Proposed Action would constitute a major federal/state action that could significantly affect the environment, requiring the preparation and distribution of an Environmental Impact Statement (EIS) for public review. If it is determined that this action would not significantly affect the environment after incorporation of management actions and mitigation measures, a Finding of No Significant Impact (FONSI) and Finding of No Practicable Alternative (FONPA) would be prepared and issued. A FONPA is required for impacts to wetlands and floodplain pursuant to Executive Orders 11988, *Floodplain Management*, and 11990, *Protection of Wetlands*, and the authority delegated by Secretary of the Air Force, Order 791.1.

This EA is based on a combination of preliminary design reports, technical studies, engineering analysis, and existing environmental documents. People contacted for collection of needed information are listed in Section 7.0. References for this document are listed in Section 8.0.

1.2 Purpose and Need for the Action

The purpose of the Proposed Action is to improve support to the war fighter by pursuing opportunities to enhance the capability and capacity at AFSC. The need of the Proposed Action is to provide opportunities for meeting the workload capacity/capability requirements of AFSC, to overcome facilities constraints at AFSC, to reduce costs of facilities ownership for involved parties, and to reduce costs of products produced or maintained at such facilities.

1.3 Objectives

NEPA requires that a decision made with respect to the Proposed Action be based on analysis of a reasonable range of alternatives that are likely to meet project objectives. Objectives are specific statements of purpose that describe what must be accomplished for a project to be considered a success. Alternatives selected for detailed analysis must meet these objectives to a large degree, and fulfill the project purpose and need for action.

The following objectives were developed to guide preparation of the EA:

- Create a partnership between AFSC and private industry to enhance AFSC capability to increase aircraft availability and reduce sustainment costs
- Enhance State of Georgia aerospace workforce development and aerospace technology development capabilities
- Create aerospace facilities in Georgia suitable for aerospace MRO work

To meet these objectives, the Proposed Action would:

- Support AFSC sustainment requirements
- Be enduring and applicable to typical system sustainment requirements
- Comply with/enhance USC Title 10 requirements
- Be cost-advantageous

1.4 Project Requirements

In addition to federal and state environmental requirements, the Proposed Action would be required to comply with federal and USAF requirements pertaining to flight line, ramp, and taxiways, and several USAF requirements regarding security, safety, processes, and space and equipment specifications that would be the responsibility of the facilities owner. A general list of facility requirements required to conduct military aircraft work is in Appendix A.

Several requirements identified for the evaluation of alternatives were based on fulfilling the purpose of developing the proposed G-RAMP facilities. The proposed alternatives that merit detailed evaluation would meet the following criteria, which support the purpose and need for the Proposed Action:

- Ability to provide adequate space to accommodate an aerospace industrial complex, including hangar facilities, public infrastructure, and office/professional space.
- Right of entry into RAFB, allowing access for due diligence and construction. An ROW agreement from RAFB would be required for access to the finished G-RAMP facilities.
- Compliance with DoD minimum force protection construction standards as outlined in *DoD Minimum Antiterrorism Standards for Buildings* (DoD 2003):

- A building greater than 150 feet from the controlled perimeter, and a site large enough for a 33-foot standoff distance from the structure.
- Fencing and construction materials shall not penetrate any part of Taxiway E.

Further, in accordance with the USAF Sustainable Design and Development policy dated July 31, 2007, USAF construction projects, regardless of scope or funding source, shall endeavor to use the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating Systems as their self-assessment metric. This is consistent with the Energy Policy Act of 2005 and Executive Order (EO) 13423. Beginning in Fiscal Year 2009, 100 percent of each Major Command's Military Construction vertical construction projects, with climate control, shall be designed so that they can achieve LEED Silver certification.

1.5 Early Coordination

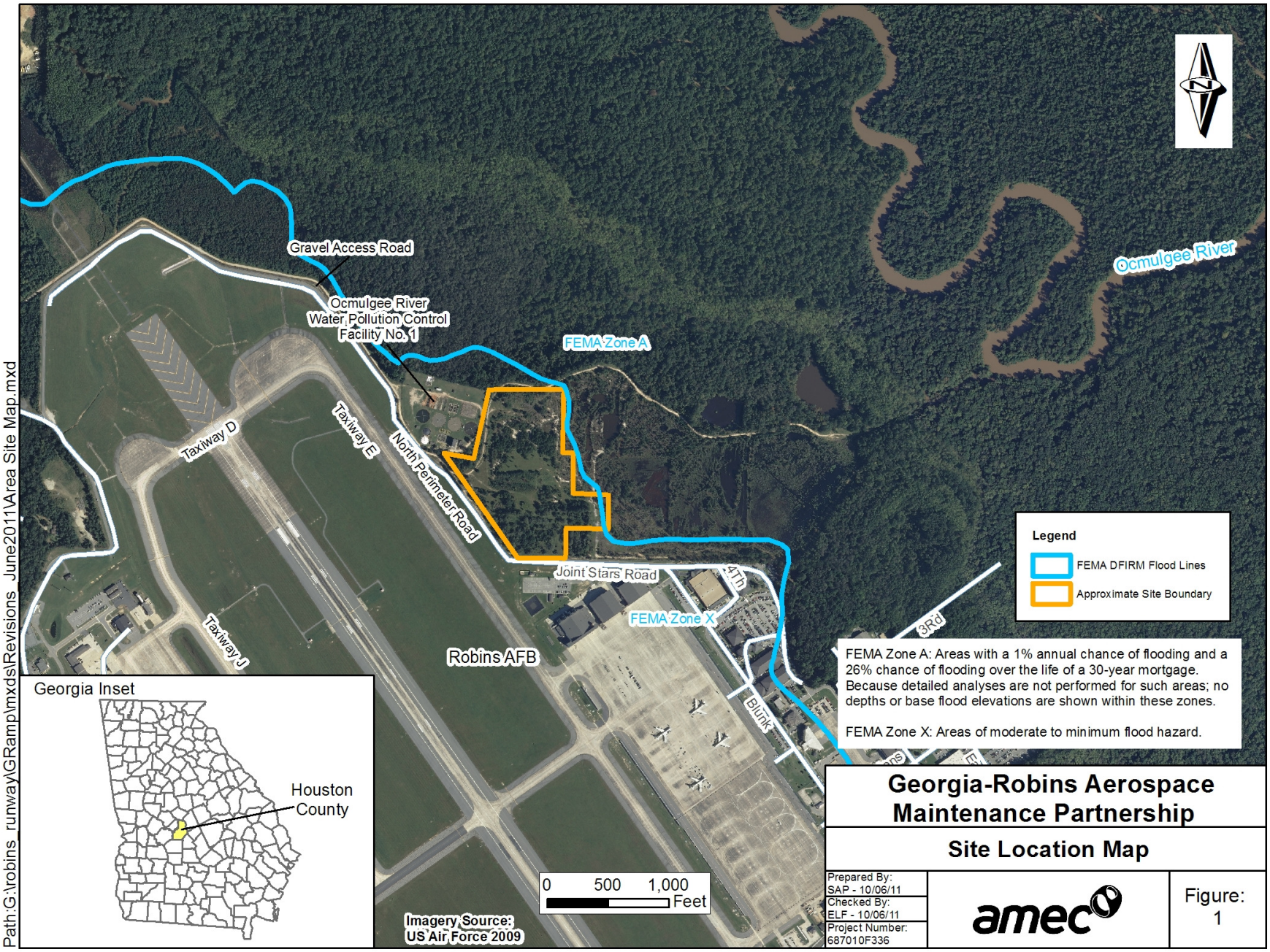
The City notified federal and state agencies and Indian tribes of the intent to perform an EA for the proposed construction of G-RAMP. Copies of notification letters and responses are included in Appendix B.

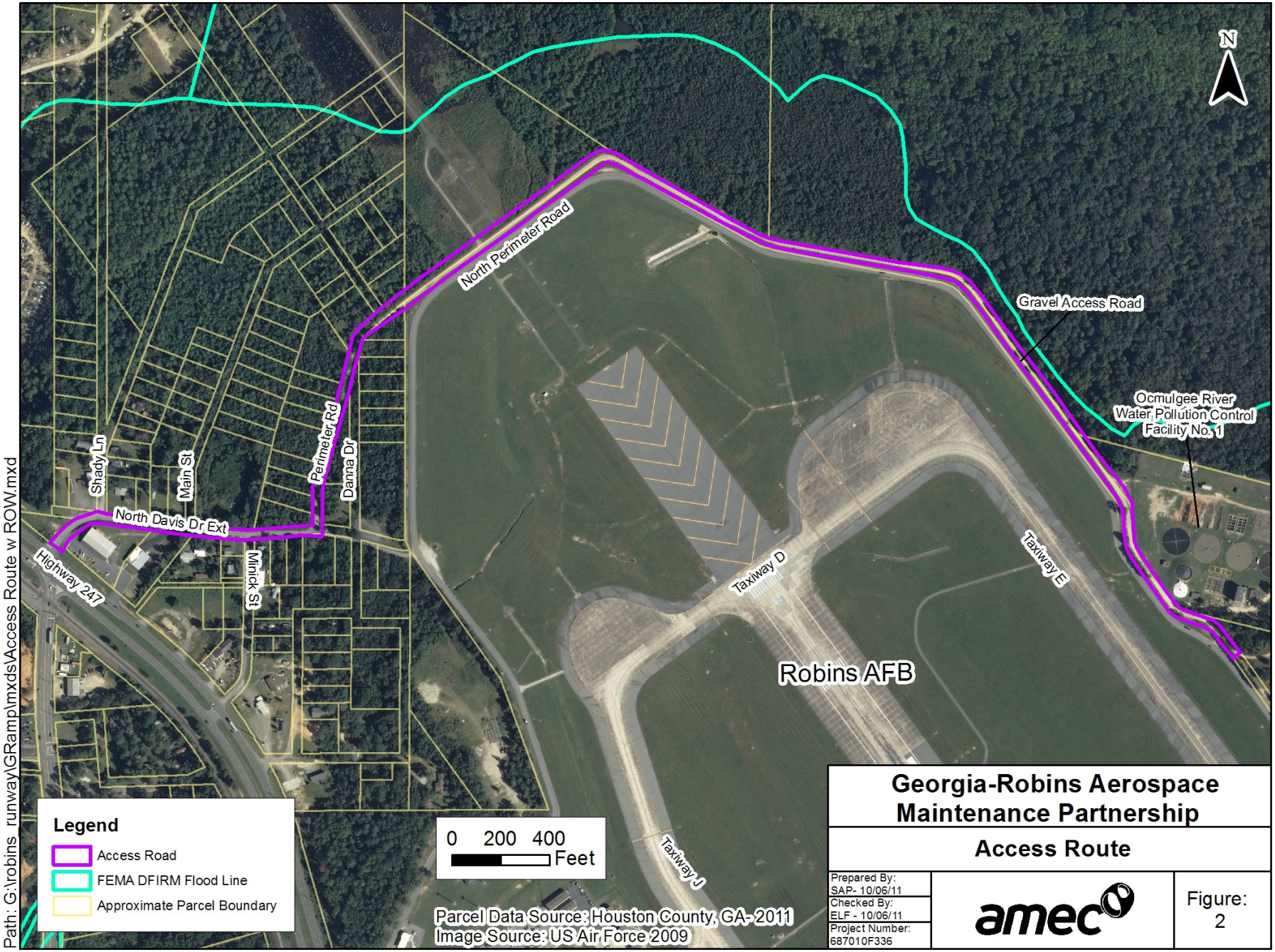
2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and No Action Alternative, presents the considerations used for selecting alternatives, and summarizes the environmental consequences of implementing the Proposed Action and No Action Alternative.

2.1 Project Location

RAFB is in Houston County in central Georgia, approximately 100 miles southeast of Atlanta, 18 miles south of Macon, and immediately east of the City of Warner Robins. The location of the proposed Project Site is next to the northeast end of RAFB, approximately 400 feet east of Taxiway E and north of an existing parking lot (the Project Site) (Figure 1). The Project Site, approximately 24.5 acres, is part of 544 acres owned by the City. The Project Site is generally bounded by RAFB to the west and south and by the Oaky Woods Wildlife Management Area to the north and east. The City's Ocmulgee River Water Pollution Control Facility No. 1 is located next to the northwest corner of the Project Site. Further, a City- owned sewage force main extends along the northern Project Site boundary next to an existing dirt road that follows the tree line. A portion of the Project Site is located within the 100-year floodplain of the Ocmulgee River. The west bank of the river is located ±3,000 feet from the northeast boundary of the Project Site. North Perimeter Road and Joint Stars Road travel just outside the west and south boundaries of the Project Site, respectively. A City-owned gravel access road, inclusive of a 50-foot right-of-way (ROW), extends around the north end of RAFB from the City's Ocmulgee River Water Pollution Control Facility No. 1 to North Davis Drive west of RAFB. This gravel road is located outside RAFB and parallels North Perimeter Road, which is located within RAFB (Figure 2).


Gravel Access Road
Ocmulgee River Water Pollution Control Facility No. 1
FEMA Zone A
Ocmulgee River
Taxiway D
Taxiway E
North Perimeter Road
Joint Stars Road
47th
FEMA Zone X
3Rd
Taxiway J
Robins AFB
Blunk
Legend
FEMA DFIRM Flood Lines
Approximate Site Boundary
FEMA Zone A: Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
FEMA Zone X: Areas of moderate to minimum flood hazard.
Georgia Inset
Houston County
0 500 1,000 Feet
Imagery Source: US Air Force 2009
Path:G:\robins_runway\GRamp\mxds\Revisions_June2011\Area Site Map.mxd
Georgia-Robins Aerospace Maintenance Partnership
Site Location Map
Prepared By: SAP - 10/06/11
Checked By: ELF - 10/06/11
Project Number: 687010F336
amec
Figure: 1



Georgia-Robins Aerospace Maintenance Partnership

Access Route

Prepared By: SAP- 10/06/11 Checked By: ELF - 10/06/11 Project Number: 687010F336	amec	Figure: 2

2.1.1 Current Access

Access to North Perimeter Road and Joint Stars Road within RAFB is from a secured entrance from State Highway 247 on the west side of RAFB. Currently, there is no direct access to the Project Site from RAFB because a secured perimeter fence separates RAFB from the Project Site. The current access road is located outside the RAFB secured perimeter. The access road is a dedicated City 50-foot ROW gravel road that is used by staff working at the Ocmulgee River Water Pollution Control Facility No. 1. Because of the access road's proximity to RAFB, visitors traveling the road are typically escorted by City personnel. The access road is also secured with a locked gate. There is no signage for the access road. The gravel access road extends north from North Davis Drive, located east of State Highway 247, along the north end of RAFB to the City's Ocmulgee River Water Pollution Control Facility No. 1 (Figure 2).

2.1.2 Land Use

An approximate 1-acre cemetery tract (Site 9HT128, also known as "the Wellston cemetery") is located immediately next to the Project Site near the south boundary. The cemetery does not possess the attributes as set forth in the National Register significance criteria to be eligible for inclusion in the NRHP. Georgia statues afford certain protections for cemeteries, and Site 9HT128 will be preserved. Based on results of multiple investigations by the City and RAFB, the Georgia Department of Natural Resources Historic Preservation Division (HPD) directed that a 50-foot buffer be maintained on the east side of the cemetery plot to protect from ground-disturbing activities and the cemetery would remain undisturbed as a result of the Proposed Action. The City would follow 36 CFR 800.13 of the NHPA for Post Review studies should additional discoveries be made during construction. Next to the cemetery is a small concentration of bricks, stones that may be remnants of a farmhouse, and approximately 5 acres of overgrown pecan orchard noted by Garrow (1996). However, during the Phase I archaeological investigation of the APE, these areas were determined not to possess archaeological integrity for recommendation for inclusion in the NRHP. Other past disturbances to the Project Site include ground disturbance from vehicles and construction equipment accessing the adjacent historic borrow pits that were used for construction of RAFB projects since the late 1950s. These features are described in more detail in Section 3.0.

2.2 Proposed Action

The Proposed Action would involve construction of an aerospace industrial complex, including hangar facilities, ramp space, public infrastructure, and office/professional space for program management. This complex would facilitate a PPP between AFSC, the City, and private industry. The Proposed Action would capitalize on the PPP's ability to share sustainment capabilities, to increase aircraft availability, to reduce costs, to enhance aerospace workforce development, and to enhance technical capabilities. The proposed facilities would be privately built (non-DoD funds) as determined by the City, and the City would lease the space to an appropriate industry service provider, either DoD or private industry. AFSC would negotiate an ROW that would

include terms for access to RAFB, access to the G-RAMP complex, and matters pertaining to the ramp between the RAFB runway and the G-RAMP complex. AFSC and/or other government entities may then enter into contracts with the private sector for accomplishment of DoD requirements within the G-RAMP facilities, including potential integrated maintenance partnerships between industry and AFSC organizations.

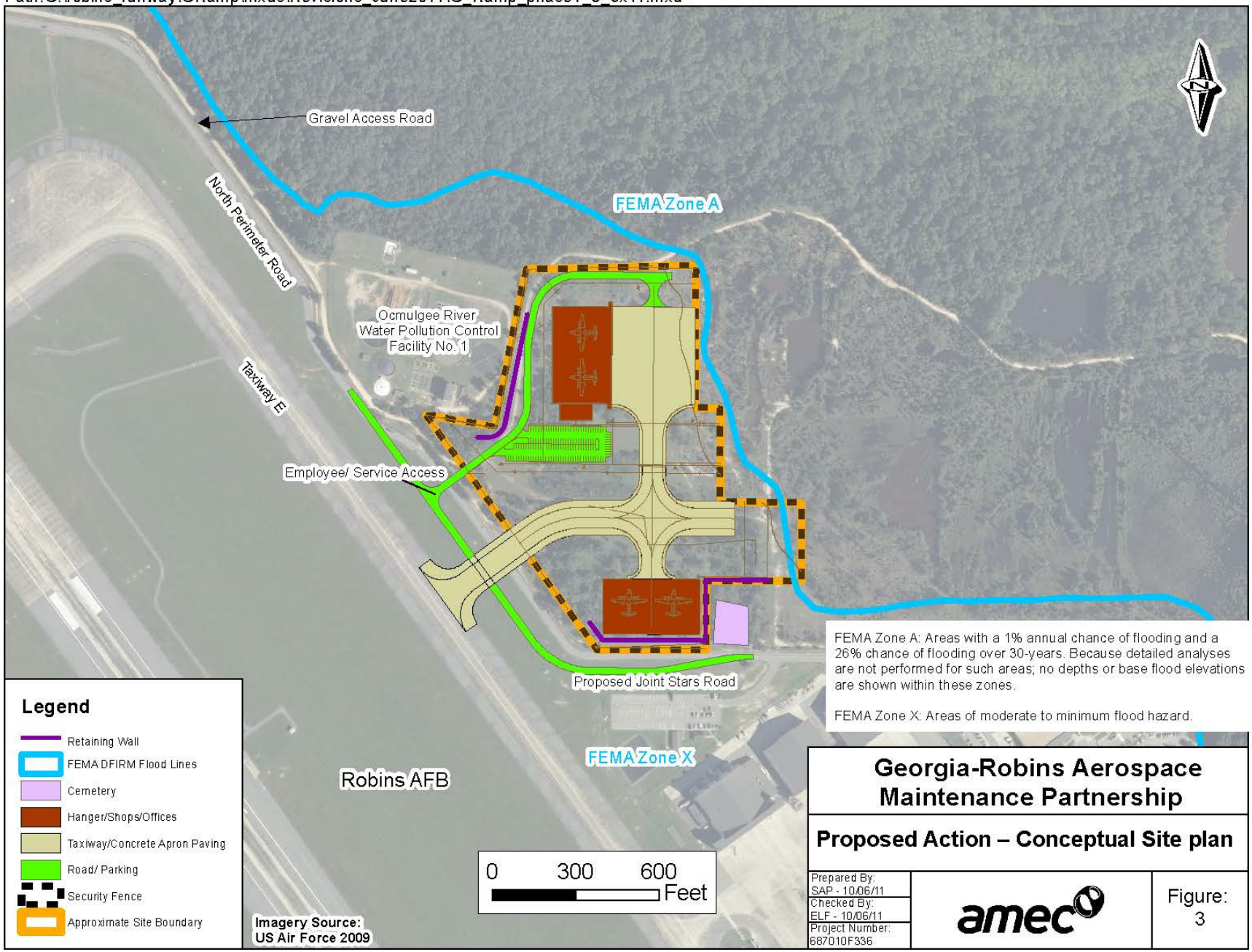
The Proposed Action would use certain RAFB assets to reduce the overall project cost. These shared assets would include the airfield operations, a taxiway connection, and a secured entrance to RAFB and North Perimeter Road (Figure 3). Improvements would consist of site preparation and grading, infrastructure improvements such as water and sanitary sewer systems to serve the facility, development of a taxiway extension/connection to RAFB, aircraft parking areas, a vehicular access road, and construction of hangar facilities to support RAFB and private contractors. The proposed improvements, based on the *Preliminary Engineering Report* (Carter & Sloope 2009), are conceptual and do not include all potential improvements that may occur on the Project Site. Because the exact footprint of the Proposed Action is not fully known at this time, it is assumed that the 24.5-acre Project Site would be developed. The construction period is estimated to be approximately four to five years for completion of the G-RAMP facilities and supporting infrastructure. Details of the proposed improvements are described below.

Site Preparation – The Proposed Action would require clearing, grubbing, and mass grading to prepare the Project Site for the new infrastructure improvements and the hangar facilities. According to the *Preliminary Engineering Report* (Carter & Sloope 2009), approximately 450,000 cubic yards of earthwork is anticipated to be moved during mass grading to bring the Project Site to a finished grade of 266 feet above mean sea level (AMSL). This amount of fill is estimated in the *Preliminary Engineering Report* (Carter & Sloope 2009) and is subject to change. Excavation would be required in the area of Joint Stars Road to facilitate the proposed access road and taxiway connection. Approximately 1,950 lineal feet of Joint Stars Road is proposed to be relocated, as shown in Figure 3. The excavation within the area would also require the relocation of power and communication lines that parallel the existing road location.

Facilities Improvements – Improvements would consist of constructing hangars capable of facilitating the workload of up to two C-17 or C-5 aircraft. Each hangar would have attached shop facilities. A security fence would surround the facilities, parking areas, and driveways.

Sanitary Sewer and Water Line Improvements – Supporting sanitary sewer facilities to be developed would include approximately 850 linear feet of gravity main, a sewage pumping station, and a sewage force main. The sewage pumping station is proposed in a location that would allow a gravity flow connection from future expansion areas. The sewage pumping station would pump the sewage to the intake structure at the adjacent City Ocmulgee

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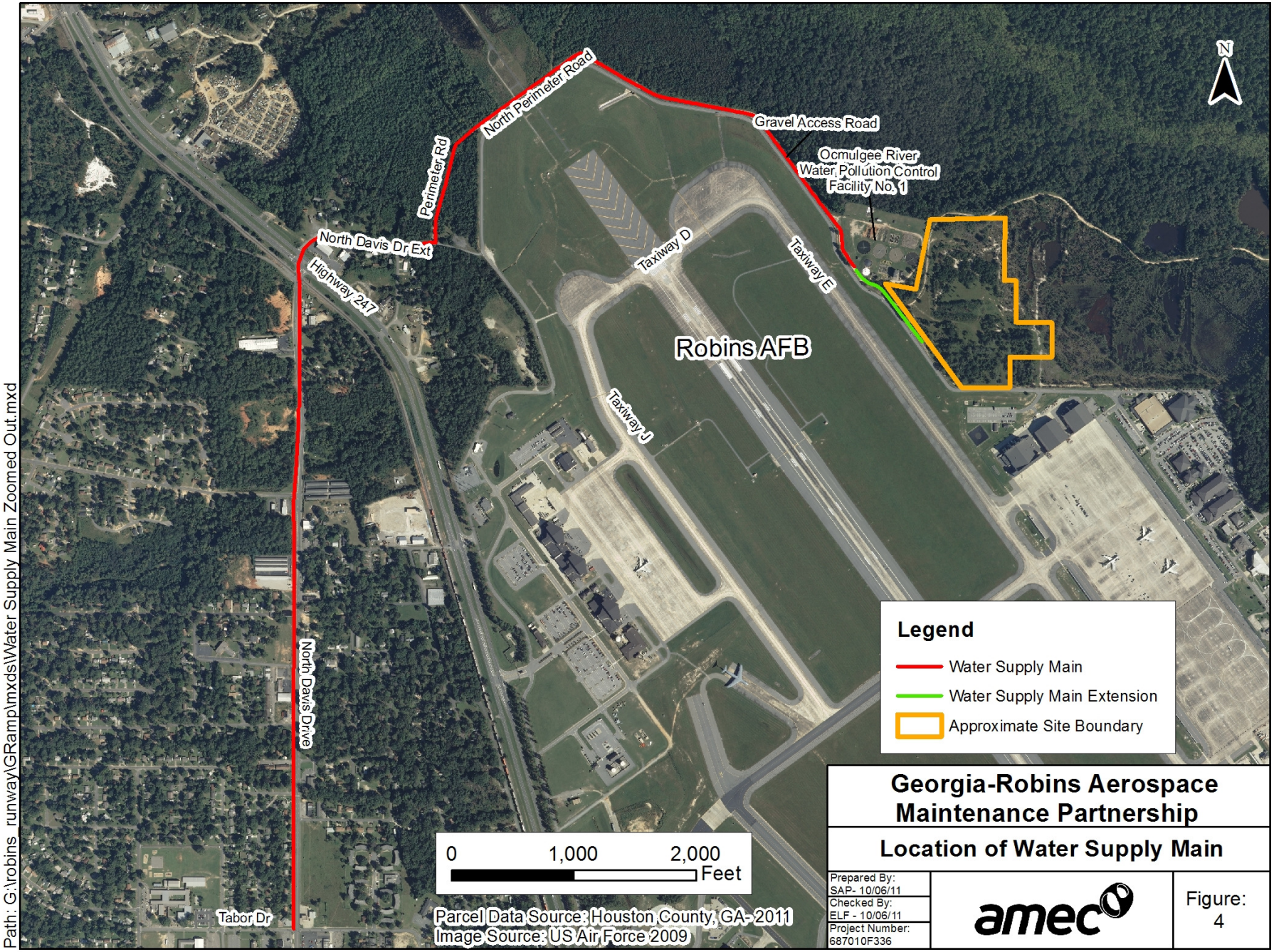


River Water Pollution Control Facility No. 1. The sanitary sewer system improvements would be designed and constructed in accordance with City standards.

RAFB operates its own water and fire protection systems. These facilities are dedicated to RAFB and are not planned to be extended to serve the Proposed Action. The City's municipal water supply and distribution system includes a 6-inch water line that serves the City's Ocmulgee River Water Pollution Control Facility No. 1; however, the 6-inch main is not adequate to provide service to the proposed facilities. Water system facility improvements for the Proposed Action would include a water main, sanitary sewer extension, master meter, and backflow prevention for connection of the water system and fire hydrants. A new 12-inch ductile iron water supply main would replace the existing 6-inch water line (Figure 4). The new line would connect to the existing 12-inch main at North Davis Drive and Tabor Drive. From this intersection, the new water main would extend approximately 13,000 feet (approximately 2.46 miles) north along North Davis Drive, cross the railroad tracks and State Highway 247, and continue to the Project Site along North Davis Drive Extension and Perimeter Road. The new 12-inch water main would be placed within the same location as the existing 6-inch water line within the City's ROW that currently serves the Water Pollution Control Facility No. 1. The new water main would then loop the hangar facilities on the Project Site and provide fire protection along the new taxiway. The domestic and fire protection supply mains for the hangars would be served by the new water main. The water system improvements would be designed and constructed in accordance with City standards.

Storm Drainage Collection System – A storm drainage collection system is proposed to collect surface drainage from the Project Site. The storm sewer system would include drop inlet structures, trench drains, and connecting storm sewer piping. The piping system would discharge the stormwater into a proposed stormwater treatment pond to be located within the Project Site. Construction design of the proposed stormwater treatment pond would consider the 11 minimum standards outlined in the Georgia Stormwater Management Manual (Appendix C). These standards are the recommended minimum stormwater management performance requirements for new development or redevelopment sites. Additional details regarding stormwater treatment and management are provided in Section 3.1.4.

Access/Roadway/Parking Improvements –The proposed access route would use existing roadways and is not anticipated to impact the floodplain or wetlands (Figure 2). During development of the Project Site, construction workers would access the site by taking a shuttle bus/van from off-site City-owned parking lots using the existing gravel access road. This gravel access road extends north from North Davis Drive, located east of State Highway 247, along the north end of RAFB to the City's Ocmulgee River Water Pollution Control Facility No. 1. Future access to the Project Site would also be from the existing gravel road. A secured entrance would be provided near the intersection of North Davis Drive and Perimeter Road on the west side of RAFB. The access road would be paved within the previously disturbed portions of the existing 50-foot ROW.



Georgia-Robins Aerospace Maintenance Partnership

Location of Water Supply Main

Prepared By: SAP- 10/06/11 Checked By: ELF - 10/06/11 Project Number: 687010F336	amec	Figure: 4

The existing Joint Stars Road would be relocated approximately 150 feet southwest, and the new access road would connect to the relocated Joint Stars Road. A traffic control lighting system is proposed to control vehicular traffic crossing the new taxiway. Parking facilities, sidewalks, and driveways, including a perimeter access road, are proposed to support the hangar facilities.

The proposed roadway improvements would be designed in accordance with Georgia Department of Transportation standards and specifications, current American Association of State Highway and Transportation Officials design criteria, City engineering standards and requirements, and other accepted engineering practices. Further, the Proposed Action would comply with Section 438 of the Energy Independence and Security Act (EISA) of 2007, requiring use of low-impact development (LID) techniques during construction. This compliance would be consistent with the U.S. Environmental Protection Agency's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects Under Section 438 of the Energy Independence and Security Act* (USEPA 2009) (Section 4.1.4). LID techniques would be determined as appropriate during the design review process. The City would be responsible for maintenance of the roadways within the Project Site.

Taxiway/Apron Improvements – A new concrete taxiway connection to RAFB Taxiway E is proposed to provide aircraft access to the new hangars. The taxiway could be extended to serve future expansion. Also proposed is a concrete apron between the hangars and a concrete paved area for parking aircraft at the south end of the Project Site. A second and shorter connecting taxiway would be constructed to provide access to the apron and hangar facilities. The taxiways would be lighted. The proposed concrete taxiways and aprons would be designed in accordance with Air Force Base Standards and Specifications.

Erosion Control Measures – Erosion control measures, such as temporary fencing, seeding, and mulch, would be implemented and maintained during construction in accordance with local, state, and federal regulations and requirements to reduce erosion and sedimentation and protect neighboring wetlands. The Project Site would be stabilized with permanent vegetation after grading activities. Additional details regarding erosion control are provided in Section 4.1.4.

2.3 No Action Alternative

Under the No Action Alternative, construction of the G-RAMP facilities would not occur. There would be no shared assets or sustainment and operational capabilities between AFSC and private industry. Therefore, there would be no reduction of costs or increase in aircraft availability. Under the No Action Alternative, aerospace-related jobs would not be created and the Middle Georgia community would not receive economic benefit. As described in Section 3.7, the potential for the Proposed Action to create additional jobs with a positive economic impact would be removed.

2.4 Alternatives Considered and Eliminated from Further Consideration

In accordance with NEPA requirements, alternatives to the Proposed Action were considered to avoid unnecessary impacts and allow analysis of reasonable ways to achieve the stated purpose. For alternatives to be considered reasonable and warrant further detailed analysis, they must be implementable and meet the purpose, need, and objectives for the action as stated in Sections 1.2 and 1.3. RAFB has facility constraints and no identifiable locations to construct hangar facilities, ramp space, and office space. There are no other City-owned properties next to RAFB that would allow immediate access to the taxiways on RAFB. This immediate access is needed to allow the shared sustainment capabilities between RAFB and the proposed G-RAMP facilities. Adjacency to RAFB also allows a secure connection to the base. As such, no other properties that could meet the purpose, need, and objectives of the project were identified. No reasonable alternatives to the Proposed Action that would meet these criteria were identified. The Proposed Action represents the minimum area of impact to meet the purpose and need for the action. Therefore, the Proposed Action is the Preferred Alternative and no other action alternatives are evaluated in detail in this EA.

2.5 Comparison of Potential Effects

Table 2-1 presents a summary comparison of alternatives receiving detailed evaluation in this EA: the Proposed Action and the No Action Alternative. This EA addresses impacts of the construction of the new G-RAMP facilities associated with the Proposed Action. Potential cumulative effects are measured by comparing conditions as they exist to conditions as they would exist under the Proposed Action. Implementation of the Proposed Action, as detailed in Section 4.0, would result in no significant adverse direct, indirect, or cumulative effects on environmental resource components.

Table 2-1 Comparison of Alternatives Receiving Detailed Evaluation

Phase of Action (C = Construction; O = Operation)		**Proposed Action**		**No Action Alternative**
		C	**O**	**Not Applicable**
Environmental Component		+ = Beneficial Effect, --- = Insignificant Adverse Effect, X = Significant Adverse Effect, O = No Effect		
Physical	Topography	---	O	O
	Surface Waters	O	O	O
	Floodplains and Wetlands	---	---	O
	Stormwater	---	O	O
	Geology and Soils	---	O	O
	Groundwater	O	O	O
	Water Supply and Drinking Water	O	O	O
Air Quality		---	---	O

Phase of Action (C = Construction; O = Operation)		Proposed Action		No Action Alternative
		C	O	Not Applicable
Waste Management and Toxic Materials	Wastewater	O	O	O
	Solid Waste	O	O	O
	Hazardous Materials and Waste	O	---	O
	Toxic Materials	O	O	O
Noise		---	---	O
Biological		---	---	O
Cultural Resources		O	O	O
Socioeconomic		+	+	O
Transportation		---	---	O
Safety		---	---	O
Cumulative		---	---	O

Note: Direct impacts on jurisdictional wetlands would be mitigated by purchase of credits from a wetland mitigation bank approved by the USACE.

3.0 AFFECTED ENVIRONMENT

This section describes the existing environment within the area potentially affected by the Proposed Action and No Action Alternative. A description of the Project Site location, including land uses/disturbances on and immediately surrounding the Project Site, is provided in Section 2.1. Descriptions of the physical environment, air quality, waste management and toxic materials, noise environment, biological environment, cultural resources, socioeconomic environment, and transportation and safety are provided below. A discussion of the affected environment provides the basis for analysis of potential effects on the environment from the Proposed Action and No Action Alternative. Site-specific information in this section is derived from on-site evaluation and information obtained from the City, the Middle Georgia Regional Commission, and RAFB personnel as cited.

3.1 Physical Environment

3.1.1 Topography

The east portion of the Project Site is within the broad floodplain of the Ocmulgee River (Figure 2). Several ridges less than 10 feet above the average elevation of the Ocmulgee River floodplain extend into the floodplain. According to the *Warner Robins NE, Georgia,* (USGS 1973) 7.5-minute quadrangle, in addition to the light detection and ranging (LiDAR) map (Figure 6 of *Draft Jurisdictional Waters Delineation Georgia-Robins Aerospace Maintenance Partnership (G-RAMP)* [MACTEC 2010]), elevations surrounding the Project Site range from 290 feet at RAFB to the west to approximately 247 feet AMSL along the Ocmulgee River east of the Project Site. Note that 1-foot contours were created from the LiDAR data, but that they are

approximate. At RAFB, topographic relief is generally minimal, rarely more than 30 feet locally (Carter & Sloope 2009).

Based on historical USGS topographic maps (Carter & Sloope 2009), the topography of the Project Site does not appear to have been greatly altered. However, soil borrowing activity since the late 1950s immediately next to the Project Site resulted in disturbance to surface soils, and slight reductions in elevations may have resulted along/near the eastern site boundary. East of the Project Site, soil borrowing activity resulted in an elevation change of up to approximately 8 feet below the 100-year floodplain elevation of 260 feet AMSL. Elevations within this area east of the Project Site, before the excavation and borrowing activities, were at or near 260 feet AMSL based on historical USGS topographic maps (Carter & Sloope 2009).

Current elevations on the Project Site range from approximately 291 feet AMSL near the west boundary to 255 AMSL near the east Project Site boundary. Elevations on the Project Site generally decrease to the east. Slopes within the Project Site range from 1 to 3 percent in areas that have been previously disturbed; however, the overall Project Site slope is not excessive (Carter & Sloope 2009).

3.1.2 Surface Waters

The main drainage feature near the Project Site is a section of the Ocmulgee River, Subwatershed Unit Hydrologic Unit Code (HUC) 030701040111, which is located within the Lower Ocmulgee River Watershed, Cataloging Unit HUC 03070104. The Ocmulgee River is one of the dominant watercourses in west-central Georgia and is part of the Altamaha River drainage. The west bank of the Ocmulgee River is located ±3,000 feet from the northeast boundary of the Project Site. No perennial or intermittent streams are located on or next to the Project Site.

3.1.3 Floodplains and Wetlands

A portion of the Project Site is located within the floodplain next to the Ocmulgee River. The proposed access road, as it approaches the Project Site, does not cross into the floodplain (Figure 2). The westernmost portion of the Project Site is indicated as “Zone A” on the Federal Emergency Management Agency (FEMA 2007) Flood Insurance Rate Map (FIRM) (100-year base flood) for Houston County, Georgia, Map No. 13153C0040E, effective date September 28, 2007. Elevation data from the FEMA map are not available for the Project Site, but based on data from the City and historical information from the 1994 flood, the 100-year flood elevation appears to be 260 feet AMSL (Carter & Sloope 2009). Excavation and soil borrowing activities next to the eastern portion of the Project Site have lowered elevations of this area to below the 100-year floodplain elevation (Carter & Sloope 2009).

No waters of the U.S., including wetlands, have been identified on the Project Site. The City conducted a wetland delineation of the Project Site and the adjacent City-owned land to the east from August 2 to 5, 2010, (MACTEC 2010) in accordance with the USACE *Wetlands*

Delineation Manual (Environmental Laboratory 1987) and the Atlantic and Gulf Coastal Plain Regional Supplement (USACE 2010). Wetlands were identified on the adjacent property (Figure 5). Based on the delineation, two designated wetland areas with potential USACE jurisdiction connect off the subject property and are considered one wetland complex. MACTEC (2010) also observed one area potentially outside USACE jurisdiction. This wetland is the location of a former borrow pit area.

The City submitted the Wetland Delineation Report and a jurisdictional determination (JD) request to USACE on November 23, 2010. In response to the Wetland Delineation Report and JD request, USACE responded with an expanded preliminary determination letter and JD checklist, dated January 28, 2011 (Appendix B). In this response, USACE stated that the "wetlands/other waters on the subject property may be waters of the United States within the jurisdiction of Section 404 of the Clean Water Act. …" A preliminary expanded JD is sufficient for application of a CWA Section 404 permit for USACE authorization to fill waters of the U.S. (Section 4.1.3).

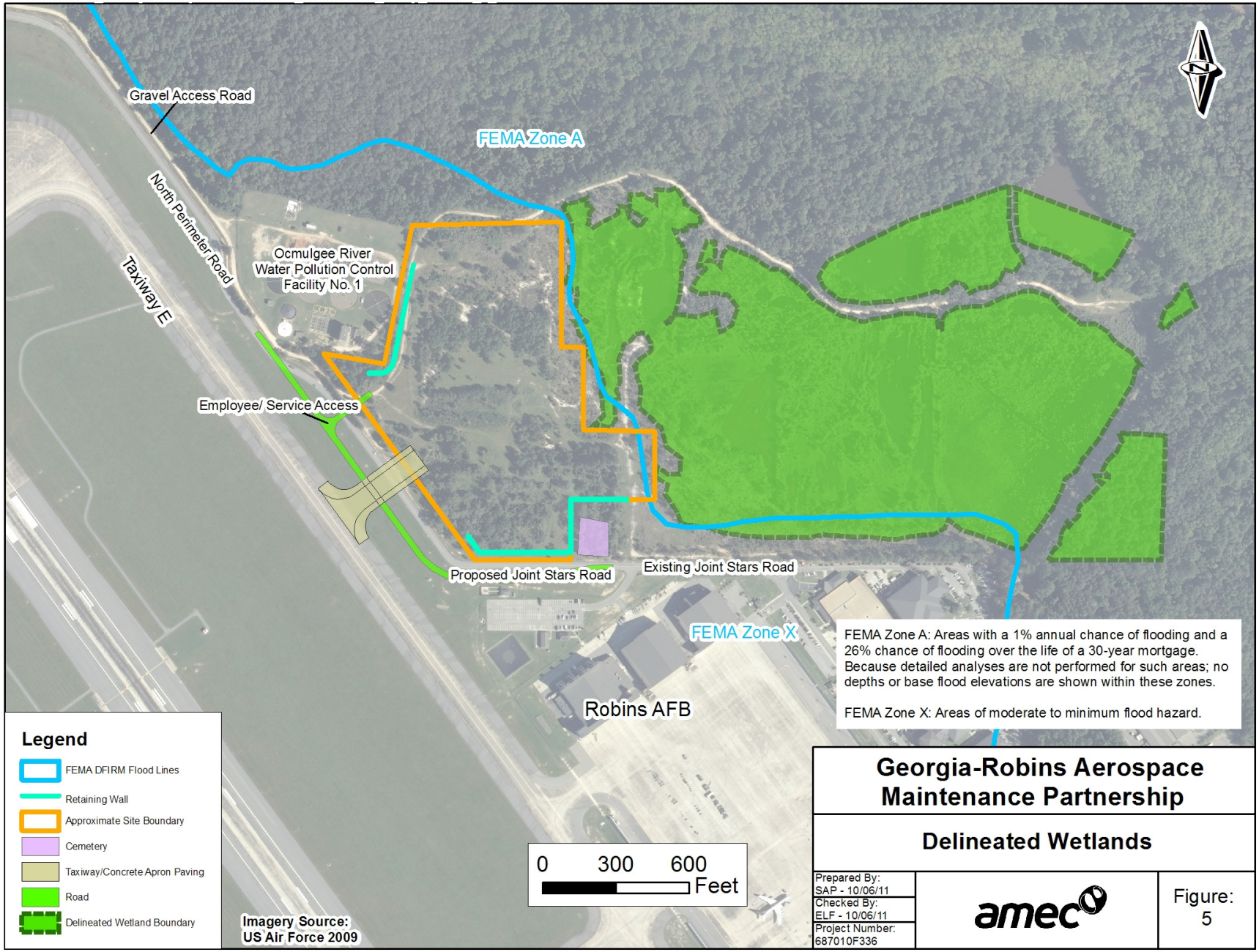
The access route owned by the City into the G-RAMP area follows the present City route of a dirt road to the City water treatment facility. The road crossed the base to the north of the runway, and extends along a route outside the base along the eastern perimeter. The dirt road is above the wetlands/floodplains that are adjacent to the G-RAMP site. Activities related to construction of improvements and vehicular traffic on the road may be expected to expand along the edges of the road into the adjacent wetlands/floodplains. The impacts would be limited to this extent, and would present substantially fewer impacts than might be expected from building a new road through the wetlands/floodplains.

3.1.4 Stormwater

Section 438 of the EISA (42 USC 17094) established stormwater design requirements for federal development and redevelopment projects (Appendix D) into law. In accordance with these requirements, federal facility projects more than 5,000 square feet must "maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow." The project footprint would consist of horizontal hard surfaces and disturbed areas associated with the project development, including building area and pavements (e.g., roads, parking, and sidewalks).

Stormwater runoff from the north portion of RAFB generally flows north-northeast and discharges to the Ocmulgee River. The Project Site may receive some stormwater runoff from adjacent off-site sources as elevations generally decrease west to east. Most precipitation falling onto the Project Site infiltrates the soils or discharges through sheet flows toward low-elevation areas along the eastern portions of the Project Site. Sheet flow from higher-elevation areas along the northern or western Project Site boundaries are likely east, northeast, or southeast generally toward the Ocmulgee River floodplain, where elevations are lower. Sheet flow from higher-elevation areas next to the western and southern Project Site boundaries may be west or south

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toward RAFB. This sheet flow may collect and flow into catch basins associated with the stormwater management system at RAFB, which is then conveyed into off-site wetland areas.

3.1.5 Geology and Soils

According to the Georgia Physiographic Map, RAFB is located on the upper margin of the Coastal Plain Province near the interface of two physiographic subdivisions known as the "Fort Valley Plateau District" and "Fall Line Hills District." The Coastal Plain is generally underlain by sediments consisting of sands, silts, clays, and limestone derived from the erosion of metamorphic and igneous rocks in the neighboring (upgradient) Piedmont physiographic province. The division between the Coastal Plain and the Piedmont is commonly referred to as "the fall line." In geologic terms, this is the contrast between the Cretaceous and younger sediments of the Coastal Plain and the older, crystalline rocks of the Piedmont (Preston 2006b). The Project Site is located within the Fort Valley Plateau District. The underlying geology consists of Cretaceous deposits of the Cusseta sand formation, which are sedimentary in origin (Hodler and Schretter 1986 in Garrow 1996).

According to the *Digital Soil Survey for Houston County, Georgia,* (NRCS 2010a) soils within the Project Site and vicinity include Chastain and Leaf, Lucy sand, Lakeland fine sand, and Swamp soils along the Ocmulgee drainage and floodplain. A figure depicting these mapped soil units is provided in the MACTEC (2010) draft Wetland Delineation Report. The primary soil type found on the Project Site consists of the Lucy sand series (LcB). According to the NRCS (2010b) Official Soil Series Descriptions, the Lucy series consists of deep and well-drained soils that formed in sandy and loamy marine and fluvial sediments of the Southern Coastal Plain. Finer-textured material is at a depth between 20 and 40 inches. Runoff depends on slope and vegetation and ranges from slow to rapid. Permeability is rapid in the sandy upper soil layer and moderate in the subsoil. Lucy sands have a low water-holding capacity. Smaller portions of Lakeland series (LqB) series soils are found within the Project Site.

3.1.6 Groundwater

The following discussion regarding groundwater resources is largely derived from the *Final Basewide Groundwater Sampling Spring 2008 Report* (Earth Tech/AECOM 2008) and the *RCRA Facility Investigation Report Site SS036 (Taxiway No. 4)* (RFI) (Earth Tech/Rust E&I 1999).

There are six primary hydrologic unit designations at RAFB: surficial aquifer, Quaternary alluvial aquifer, upper Providence, lower Providence, Cusseta (aquitard), and Blufftown aquifer. Surficial materials consist of landfill refuse or fill materials. The groundwater within the surficial materials forms an artificial, but relatively distinct, localized hydrogeologic unit that overlies the Quaternary alluvial aquifer or the upper Providence aquifer. The Quaternary alluvial aquifer consists of peat, clay, sand, and gravel layers that overlie the Providence aquifer in the Ocmulgee River floodplain areas near the Project Site. The Quaternary alluvial aquifer is exposed along the

east side of RAFB and extends west. The Providence aquifer consists of fine to coarse-grained sands with inter-layered silts and clays and is subdivided by RAFB into upper and lower units across most of RAFB and, in some instances, as a confined upper Providence unit. Below the Providence aquifer is the Cusseta unit, which acts as a semi-confining bed to the underlying Blufftown aquifer. Generally, groundwater flow across RAFB is from west to east. The flow lines on the potentiometric map (Figure 4.11) from the RFI (Earth Tech/Rust E&I 1999) show that groundwater west of the Project Site flows to the northeast. This flow is just north of the Project Site. The hilly upland areas west of the Project Site are characterized as a local area of recharge, and the wetlands area within and east of the Project Site are characterized as an area of discharge.

As reported in the RFI (Earth Tech/Rust E&I 1999), groundwater sampling and analytical results from monitoring wells located northwest and west of the Project Site indicated the presence of petroleum constituents (mainly benzene, toluene, ethylbenzene, and xylene [BTEX] and chlorinated solvents [mainly trichloroethylene (TCE)]). As a result of the 1999 RFI, the downgradient boundaries of the chlorinated solvent plumes were determined to be discharging into the wetlands east of RAFB, just north of the Project Site. The plume extends across the north end of RAFB. The RFI report concluded that the plume was attributed to an upgradient and off-base source unassociated with RAFB (Earth Tech/Rust E&I 1999).

The RFI was submitted to the Georgia Environmental Protection Division (GA EPD) in August 1999. GA EPD proposed that No Further Action (NFA) was required of RAFB with respect to the groundwater contamination. A Notice of Decision (NOD) indicating NFA was issued by GA EPD on September 12, 2002, is in Appendix E.

According to the *Final Basewide Groundwater Sampling Spring 2008 Report* (Earth Tech/AECOM 2008), the spring 2008 basewide sampling event data (collected from 19 upper Providence monitoring wells) indicate that the benzene plume, while still extensive, appears to be reduced in size and concentration compared to the data collected during the spring 2000 basewide sampling event. These data indicate that the TCE plume, originating from off-site and upgradient of RAFB, extends across the north end of RAFB and into the wetlands to the east.

3.1.7 Water Supply and Drinking Water

Public water systems, defined to be a system that provides water to at least 25 people for at least 60 days annually, are at RAFB. One well owned by the City is located approximately 1 mile southwest of the Project Site. A private well is located on the Project Site next to the former house. Analytical results of the well located on the Project Site indicated that no contamination was detected (Earth Tech/Rust E&I 1999).

According to the *Preliminary Engineering Report* (Carter & Sloope 2009), the City municipal water supply and distribution system includes a 6-inch water line that serves the water treatment plant next to the Project Site. Based on recent flow and pressure tests of hydrants at the water

treatment plant, the 6-inch main is not adequate to provide service to proposed facilities at the Project Site. RAFB operates its own water and fire protection systems; however, these facilities are dedicated to RAFB and are not planned to be extended to serve the Proposed Action.

3.2 Air Quality

Air quality at a given location is a function of several factors, including quantity and dispersion rates of pollutants, temperature, presence/absence of inversions, and topographic and geographic features. The Clean Air Act (CAA) (42 USC 7401-7671q), as amended, provides the framework for federal, state, tribal, and local rules and regulations to protect air quality. The CAA gives USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR 50) that set safe concentration levels for six criteria pollutants: particulate matter measuring less than 2.5 microns in diameter ($PM_{2.5}$) and particulate matter measuring less than 10 microns in diameter (PM_{10}), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead (Pb). Primary NAAQS are established to protect public health, and secondary standards provide protection for public welfare, which includes wildlife, climate, transportation, and economic values (Table 3-1). In addition, USEPA must ensure that air quality standards are met to control pollutant emissions from mobile (e.g., vehicles) and stationary (e.g., factories) sources. If a region is in compliance with the NAAQS for a criteria pollutant, then it is said to be in "attainment" for that pollutant. A region that was formerly in "nonattainment" but has since submitted a State Implementation Plan and

Table 3-1 National Ambient Air Quality Standards

Pollutant	Standard Value[1]	Standard Type
Carbon Monoxide (CO)		
8-hour Average	9 ppm (10 mg/m^3)	Primary
1-hour Average	35 ppm (40 mg/m^3)	Primary
Nitrogen Dioxide (NO_2)		
Annual Arithmetic Mean	0.053 ppm (100 $\mu g/m^3$)	Primary and secondary
1-hour Average	0.100 ppm	Primary
Lead (Pb)		
Rolling 3-month Average	0.15 $\mu g/m^3$	Primary and secondary
Ozone (O_3)		
8-hour Average	0.075 ppm	Primary and secondary
Particulate (PM_{10}) - Particles with diameters of 10 micrometers or less		
24-hour Average	150 $\mu g/m^3$	Primary and secondary
Particulate ($PM_{2.5}$) - Particles with diameters of 2.5 micrometers or less		
Annual Arithmetic Mean	15 $\mu g/m^3$	Primary and secondary
24-hour Average	35 $\mu g/m^3$	Primary and secondary
Sulfur Dioxide (SO_2)		
Annual Arithmetic Mean	0.03 ppm	Primary
24-hour Average	0.14 ppm	Primary
3-hour Average 1-hour Average	0.50 ppm 0.075 ppm	Secondary Only Secondary

1. Parenthetical value is an approximately equivalent concentration; $\mu g/m^3$ = microgram per cubic meter; mg/m^3 = milligram; per cubic meter; ppm = part per million; Source: USEPA 2011.

demonstrated sustained compliance with the NAAQS is said to be in "attainment maintenance."

The NAAQS represent the maximum levels of background pollutants that are considered safe, with an adequate margin of safety to protect public health and welfare. Short-term standards (1-, 3-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (quarterly and annual averages) have been established for pollutants contributing to chronic health effects. Each state is responsible for compliance with the NAAQS and has the authority to adopt standards stricter than those established under the federal program.

3.2.1 Regional Air Quality

The State of Georgia is attaining the NAAQS for the criteria pollutants in the Middle Georgia area, with the following exceptions: particulate matter ($PM_{2.5}$) within Bibb and Monroe Counties. The Macon Nonattainment Area was redesignated as a maintenance area for 8-hour ozone in June 2007, but remains as "nonattainment" for the 1997 annual particulate matter ($PM_{2.5}$) standard. Air quality in Houston County, which includes RAFB and the Project Site, is classified as an "attainment" area (i.e., pollutant levels are below the NAAQS). No portion of the Proposed Action extends into Bibb County north of Houston County.

3.2.2 Air Emission Sources

RAFB is compliant with its Title V operating permit (Air Quality Permit #9711-153-0033-V- 02-0 and Amendment No. 1, 9711-153-0033-V-02-2). The permit was issued on May 5, 2009, pursuant to the Georgia Air Quality Act, Official Code of Georgia Annotated, 12-9-1 et seq.; Georgia Rules for Air Quality Control, Chapter 391-3-1; and Title V of the CAA. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of 40 CFR 70 promulgated pursuant to the CAA.

According to the narrative supporting the permit, RAFB has the potential to emit volatile organic compounds (VOCs), nitrogen dioxide, carbon monoxide, and sulfur dioxide at a rate more than 100 tons per year. Because it is a 28-source category facility, having total fossil fuel-fired boiler capacity greater than 250 million British thermal units per hour, the facility is considered a major source under the Prevention of Significant Deterioration (PSD) regulations and is subject to PSD review for modifications in which a pollutant increase is more than the significance level. RAFB is also a major source for total hazardous air pollutant (HAP) and individual HAPs: glycol ethers, methylene chloride, methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), phenol, toluene, perchloroethylene, xylenes, and chromium compounds.

The maintenance and repair of aircraft are the primary stationary sources of air emissions at RAFB. Operations include paint stripping, painting, electroplating, degreasing, and engine testing. These operations occur throughout RAFB. Activities contributing to the primary sources of air emissions include painting and de-painting operations, solvent cleaning, and chromium

plating and anodizing. Other sources include fuel storage tanks, peaking power generators, boilers, and various sources of fugitive VOCs. Natural gas is used as the primary fuel, with No. 2 diesel fuel and air-mixed propane as backups for most of the large boilers.

There are no significant air emissions on the proposed Project Site, which is not developed and has no land uses. Air quality near the Project Site is primarily affected by the proximity to the flight line. Air emissions next to and near the Project Site include primarily mobile sources produced by aircraft using Taxiway E located to the west, and vehicle traffic traveling on Joint Stars Road and North Perimeter Road. Emissions from these sources are an insignificant part of total air emissions associated with flight line operations.

3.3 Waste Management and Toxic Materials

3.3.1 Wastewater

The Ocmulgee River Water Pollution Control Facility No. 1, next to the west side of the proposed Project Site, provides treatment of domestic sewage for City customers, and would also treat sewage from the Proposed Action. A 36-inch gravity main flows from the City sewage collection system across the north end of RAFB to the treatment facility. The treated wastewater is pumped from the facility to the Ocmulgee River via a force main that extends across the north boundary of the Project Site. According to the *Preliminary Engineering Report* (Carter & Sloope 2009), a new sewage pumping station would be required to serve the project. The existing gravity main has an invert elevation too high to serve the Proposed Action (Carter & Sloope 2009). The City would provide wastewater service with a proposed lift station for the Proposed Action. A fixed backup power supply for the proposed lift station would be required to avoid overflows due to power outages.

There are no sources of wastewater on the proposed Project Site, which is not developed and has no land uses.

3.3.2 Solid Waste

Solid wastes generated at RAFB are managed in accordance with the Resource Conservation and Recovery Act (RCRA) and the Georgia Solid Waste Management Act, and include wastes from base housing, municipal operations, office complexes, industrial facilities, and construction/demolition areas. An *Integrated Solid Waste Management (ISWM) Plan* (RAFB 2010) was developed to establish an integrated approach address solid waste management issues at RAFB. The approach includes source reduction, recycling, and disposal. Solid wastes that cannot be recycled are collected and transported to the Houston County landfill for disposal. Approximately 50 years of additional capacity could be acquired through expansion of the landfill if needed. Solid wastes destined for recycling are collected in waste-specific containers at various locations at RAFB, or are turned in to the Defense Logistics Agency Disposition Services.

Solid waste is not generated on the proposed Project Site, which is not developed and has no land uses. Evidence of unauthorized dumping, including tires, household trash, and construction and demolition waste, has been found on the Project Site near the cemetery (Preston 2006b). There has been no significant evidence of buried waste (i.e., mounds and depressions) found on the Project Site (Preston 2006b). Most of the dumped solid waste would be disposed of at the Houston County landfill.

3.3.3 Hazardous Materials and Waste

Hazardous materials at RAFB are stored and handled in accordance with Occupational Safety and Health Administration (OSHA) regulations, 29 CFR 1910.1200(e)-(h), *Hazard Communication.* Hazardous waste is managed under RCRA, *Standards Applicable to Generators of Hazardous Waste* (40 CFR 262); Georgia Rule 391-3-11, *Hazardous Waste Management*; and RAFB's Hazardous Waste Facility Permit (Hazard Waste Facility Permit HW-064[S]).

According to a Phase 1 Environmental Site Assessment (ESA) (Preston 2006b) conducted for the Project Site, RAFB has 13 areas that contain hazardous waste from past disposal activities. Two areas within the search distance of the Phase 1 ESA were placed on the National Priorities List: Landfill No. 4 and an adjoining sludge lagoon. These areas are located along the west border of the Ocmulgee River floodplain. Various types of hazardous waste have been generated at RAFB, including electroplating waste containing heavy metals and cyanide, organic solvents from cleaning operations and fire training exercises, and pesticides. The landfill and lagoon were used until 1978. The 13 areas that contain hazardous waste from past disposal activities are located approximately 4,500 feet east of State Highway 247 in the central part of RAFB. Because the regulated sites are downgradient of the Project Site, they are not likely to have an environmental impact on the Project Site (Preston 2006b).

No hazardous materials are stored, and no hazardous waste is generated, at the proposed Project Site. According to the Phase 1 ESA (Preston 2006b), there is no evidence of hazardous materials or waste disposal on or immediately next to the Project Site. There are several empty, rusted, 55-gallon drums along the north Project Site boundary; however, there were no indications (e.g., stains, odors, or stressed vegetation) of hazardous substances around the drums.

3.3.4 Toxic Materials

RAFB conducted inspection and removal of transformers and other large capacitors containing polychlorinated biphenyls (PCBs) at concentrations greater than 50 parts per million in July 1991 (URS 2009a). Only PCB-free transformers are used at RAFB (URS 2009b). Identified and potential asbestos-containing material (ACM), lead-based paint (LBP), or other toxic materials at RAFB are addressed and managed in accordance with applicable state and federal regulations (URS 2009b).

Because no standing structures are present on the Project Site, the Phase 1 ESA (Preston 2006b) conducted for the Project Site did not address radon, ACM, LBP, or lead in drinking water. The Project Site was inspected for signs of storage, use, and disposal of PCB-fluid-filled transformers and capacitors/ballast. No PCB-containing equipment is located within the boundaries of the Project Site (Preston 2006b).

3.4 Noise Environment

Noise modeling was conducted in 1997 as part of an *Air Installation Compatible Use Zone (AICUZ) Study* (USAF 1998). The study identified areas with elevated noise levels (above 65 decibels [dB]) to serve as a tool in future planning and zoning activities. According to the National Institute on Deafness and Other Communication Disorders (2010), typical conversation is within the range of 50 to 65 dB and is not loud enough to cause hearing damage. The AICUZ study provides guidelines for land uses compatible with airfield operations. Noise modeling contours developed in the AICUZ study were based on the Day-night Average Noise Level (DNL) to predict community response to various noise levels, and to identify compatible land uses. Noise modeling results for RAFB indicated DNL zones ranging from 80+ to 65 dB extending from the runway to off base, respectively (USAF 1998).

No significant noise is being generated at the proposed Project Site. Future noise generated from the Proposed Action would be typical of that from office buildings, maintenance shops, hangars, taxiing aircraft, and maintenance-related engine runs. Noise sources such as construction activities, heavy equipment, and vehicle traffic are minor compared to the aircraft noise generated by airfield operations and maintenance-related engine runs. Noise levels outside the Project Site would be generated by vehicles on the adjacent roadways and by aircraft on approach, landing, and takeoff on the nearby airfield and taxiways. According to the AICUZ study (USAF 1998), noise levels at the Project Site are in the range of 80 to 70 dB.

3.5 Biological Environment

The biological environment and ecology of RAFB have been summarized in the *Integrated Natural Resources Management Plan* (INRMP) (RAFB 2007). Appendices to the INRMP list flora and fauna known to occur on RAFB and contain maps indicating locations of known natural resources. The INRMP serves as a decision-making tool regarding environmental issues and as the basis of natural resource management for RAFB. The INRMP (RAFB 2007) is largely not applicable to the Proposed Action because the Project Site is not located within RAFB. However, the INRMP does describe some natural resources surrounding and next to the Project Site. Where applicable, these resources are described below.

The Project Site and immediate vicinity contain altered hardwood forest and developed areas consisting of historic borrow pits from construction of RAFB projects. The forest type on the Project Site consist primarily of upland forest, which begins to transition to bottomland forest along the eastern edge of the site. Upland hardwood forests are characterized by various species

of oaks (*Quercus* spp.), southern magnolia (*Magnolia grandiflora*), American beech (*Fagus grandiflora*), sweetgum (*Liquidambar styraciflua*), and loblolly pine (*Pinus taeda*) (RAFB 2007). Bottomland forests consist of a series of plant community mosaics due to different hydrologic regimes ranging from seasonal to semi-permanent flooding, and are characterized by a varied overstory of oaks and other hardwoods. Hardwood bottom forests that are often flooded for brief periods in the spring, but that can become quite dry in late summer, have dominant canopy species that include laurel oak (*Quercus laurifolia*), cherrybark oak (*Quercus pagoda*), overcup oak (*Quercus lyrata*), swamp chestnut oak (*Quercus michauxii*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), sweetgum, blackgum (*Nyssa sylvatica*), water tupelo (*Nyssa aquatica*), and water hickory (*Carya aquatica*) (RAFB 2007). According to the INRMP (RAFB 2007), the forest type surrounding the Project Site consists of mixed bottomland hardwood forest and the significant natural community surrounding the Project Site consists of bottomland hardwood swamp. Portions of the Project Site and adjacent areas to the east were harvested for pulpwood approximately five years ago, leaving a shrub-scrub area with relatively no tree stratum dominated by larger saplings.

Large open water areas east of the Project Site are estimated to be 6 feet deep, based on topographic information and local knowledge. These open water areas contain wetland vegetation that provide habitat for wildlife species including birds, reptiles, amphibians, feral hogs (*Sus scrofa*), and white-tailed deer (*Odocoileus virginianus*). An American alligator (*Alligator mississippiensis*), approximately 6 to 8 feet long, was observed in a pond northeast of the Project Site boundary. A juvenile great blue heron (*Ardea herodias*), red-shouldered hawk (*Buteo lineatus*), and great egret (*Ardea alba*) were also observed in the open water areas just east of the Project Site.

The upland areas of the Project Site are characterized by a canopy of water oak, sweetgum, loblolly pine, American beech, white oak (*Quercus alba*), and sassafras (*Sassafras albidum*). The understory consists of multiflora rose, dogfennel (*Eupatorium capillifolium*), Queen Anne's lace (*Daucus carota*), lespedeza (*Lespedeza* sp.), fescue (*Fescuta* spp.), yucca (*Yucca* sp.), and saplings from the overstory species. A feral pig, cottonmouth (*Agkistrodon piscivorous*), turkey (*Meleagris gallopavo*), and several freshwater turtle (Testudinidae) shells were observed in the upland areas directly next to the wetland areas east of the Project Site during a site visit. Upland habitat condition is largely marginal because of timber harvesting activities that have left a shrub-scrub area of sweetgum and loblolly pine barren of most fauna. However, a small area surrounding the historic homestead and cemetery in the southwest portion of the property likely provides good upland habitat, with large relic oak and hickory trees mixed with small meadows.

No federally or stated-listed threatened, endangered, or sensitive animal species or their habitats are at RAFB, except for the American alligator, which is federally listed because of similarity of appearance to the federally endangered American crocodile (*Crocodylus acutus*) (RAFB 2007). The American alligator is formally recognized by the U.S. Fish and Wildlife Service (USFWS) as being biologically secure throughout its range. Responsibilities under Section 7 of the

Endangered Species Act have been removed. The American alligator has no state status. Bald eagles (*Haliaeetus leucocephalus*) and wood storks (*Mycteria americana*) have been observed in the RAFB, Warner Robins, and Macon areas on rare occasions; however, these species do not nest or occur regularly on RAFB or the Project Site (Sargent 2011). No federally listed plant species have been recorded at RAFB; however, 10 rare plant species have been recorded on the south end of RAFB (2007). Two of these plant species, Harper's wild ginger (*Hexastylis shuttleworthii* var. *harperi*) and Ocmulgee skullcap (*Scutellaria ocmulgee*), are "state-protected" plants. Harper's wild ginger is listed as "unusual" and thus deserving of special consideration by the State. This plant is found in the creek forest plant community, which is a natural swamp forest community type found along the floodplain of Sandy Run Creek at the south boundary of RAFB. This community has a canopy dominated by sweetbay (*Magnolia virginiana*), redbay (*Persea borbonia*), blackgum, sweetgum, red maple, and water oak (RAFB 2007). Not all dominant species of the creek forest plant community were observed on the Project Site, and this community is generally considered not present. Ocmulgee skullcap is listed as "threatened" because it is likely to become an endangered species throughout all or parts of its range in the foreseeable future. This plant is typically found within the upland hardwood bluff plant community, which is not present within the Project Site. State-protected plants are species protected by law in the State of Georgia. The remaining eight plant species are considered either "watch" or "tracking" species, which are not protected by law, but their status is monitored by the State to determine whether the species should be protected.

No threatened, endangered, or sensitive plant or animal species, or supporting habitats, are expected to occur (Table 3-2) or were observed on the Project Site during the wetland delineation conducted by MACTEC in August 2010, except an American alligator observed within a pond northeast of the Project Site. The Project Site does not contain habitat (e.g., rivers, lakes, and large ponds near swamp streams) to support the American alligator or alligator snapping turtle (*Macroclemys temminckii*). Further, occurrence for the alligator snapping turtle on the Project Site is highly unlikely because it has not been recorded in Houston County. The alligator snapping turtle has no federal listing status but is considered a state threatened species.

Bald eagles are not expected to nest or roost on the Project Site due to the lack of suitable habitat. Wood storks may visit the Project Site to temporarily rest; however, no nesting or roosting has been documented/reported on the Project Site (Sargent 2011). Wood storks nest in colonies and will return to the same colony site for many years (NatureServe Explorer 2011).

Harper's wild ginger was not included on the federal species list, as shown in Table 3-2; however, this plant has been documented to occur on RAFB, according to the INRMP (RAFB 2007).

No critical habitats have been identified on or near the Project Site (USFWS 2011). The "Habitat Available in the Project Area" column in Table 3-2 below is provided to identify potential direct and indirect impacts to listed species as these impacts relate to "take," which is prohibited under

Section 9 of the ESA. The statutory definition of "take" includes "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA § 3(19)).

Table 3-2 Federally and State-protected Animal and Plant Species Occurring Within Houston County and the Surrounding Counties of Bibb, Bleckley, Dooly, Macon, Peach, Pulaski, and Twiggs, Georgia

Species Name (Scientific Name)	County[1]	Federal Status[2]	State Status[3]	Preferred Habitat	Habitat Available in Project Area?
BIRDS					
Bald eagle (*Haliaeetus leucocephalus*)	Bi, Bl, Do, Ho, Ma, Pe, Pu, Tw	BGEPA	E	Associated with coasts, rivers, and lakes, usually nesting near large bodies of water.	No Nesting, Roosting, Foraging
Red-cockaded woodpecker (*Picoides borealis*)	Bi, Bl, Do, Ho, Ma, Pe, Pu, Tw	E	E	Nest in mature pine with low understory vegetation (<1.5 meters); forage in pine and pine hardwood stands >30 years of age, preferably >10 inches dbh.	No Nesting, Foraging
Wood stork (*Mycteria americana*)	Bi, Bl	E	E	Primarily feed in fresh and brackish wetlands and nest in cypress or other wooded swamps. Roosting locations typically include cypress "heads" or swamps, mangrove islands, expansive willow thickets or small, isolated willow "islands" in broad marshes.	Yes Resting Only
REPTILES					
Alligator snapping turtle (*Macroclemys temminckii*)	Do, Ma	NFS	T	Rivers, lakes, and large ponds near stream swamps.	No
Barbour's map turtle (*Graptemys barbouri*)	Do, Ma	NFS	T	Restricted to the Apalachicola River and larger tributaries including the Chipola, Chattahoochee, and Flint Rivers in east Alabama, west Georgia, and west Florida.	No
Gopher tortoise (*Gopherus polyphemus*)	Bi, Bl, Do, Ho, Ma, Pu	NFS	T	Well-drained, sandy soils in forest and grassy areas; associated with pine overstory, open understory with grass and forb groundcover, and sunny areas for nesting.	No

Species Name (Scientific Name)	County[1]	Federal Status[2]	State Status[3]	Preferred Habitat	Habitat Available in Project Area?
INVERTEBRATES					
Fat three-ridge mussel (*Amblema neislerii*)	Ma	E	E	Main channels of small to large rivers with slow to moderate currents, in substrates ranging from gravel to a rocky rubble mixture of sand and sandy mud to a mixture of sand, sandy/clay substrates.	No
Gulf moccasinshell mussel (*Medionidus pencillatus*)	Do	E	E	Medium streams to large rivers with slight to moderate current over sand and gravel substrates; may be associated with muddy sand substrates around tree roots.	No
Oval pigtoe mussel (*Pleurobema pyriforme*)	Do, Ma	E	E	River tributaries and main channels in slow to moderate currents over silty sand, muddy sand, sand, and gravel substrates.	No
Purple bankclimber mussel (*Elliptoideus sloatianus*)	Do, Ma	T	T	Main channels of ACF basin rivers in moderate currents over sand, sand mixed with mud, or gravel substrates.	No
Shiny-rayed pocketbook mussel (*Hamiota subangulata*)	Do, Ma	E	E	Medium creeks to the mainstreams of rivers with slow to moderate currents over sandy substrates and associated with rock or clay.	No
FISHES					
Bluestripe shiner (*Cyprinella callitaenia*)	Do, Ma	NFS	T	Found in brownwater streams.	No
PLANTS					
Buckthorn (*Sideroxylon thornei*)	Pu	NFS	E	Oak flatwoods where soil normally is saturated for long periods after floods/heavy rain (i.e., calcareous swamps; woods bordering cypress ponds).	No
Canby's dropwort (*Oxypolis canbyi*)	Do	E	E	Peaty muck of shallow cypress ponds, wet pine savannahs, and adjacent sloughs and drainage ditches.	No

Species Name (Scientific Name)	County[1]	Federal Status[2]	State Status[3]	Preferred Habitat	Habitat Available in Project Area?
Dwarf witch-alder (*Fothergilla gardenia*)	Ma	NFS	T	Low, flat, swampy areas, especially shrub-dominated margins of upland swamps (pocosins), Carolina bays, pitcher-plant bogs, wet savannahs, and Atlantic white-cedar swamps.	No
Florida willow (*Salix floridana*)	Pu	NFS	E	In low woods, rocky and gravelly shores, and along stream beds.	No
Fringed campion (*Silene polypetala*)	Bi, Ho, Tw	E	E	Mature hardwood or hardwood-pine forests on river bluffs, small stream terraces, moist slopes and well-shaded ridge crests.	No
Green pitcher-plant (*Sarracenia oreophila*)	Bi	E	E	Open seepy meadows, along sandy flushed banks of streams, and in partially shaded red maple-blackgum low woods or poorly drained oak-pine flatwoods.	No
Harperella (*Ptilimnium nodosum*)	Do	E	E	Seeps on granite outcrops in the Piedmont; wet savannahs, ditches, and peaty fringes of pineland pools and cypress ponds in the Coastal Plain.	No
Indian olive (*Nestronia umbellula*)	Ma, Pe	NFS	T	Dry open upland forests of mixed hardwood and pine.	No
Ocmulgee skullcap (*Scutellaria ocmulgee*)	Bi, Bl, Ho	NFS	T	Forested terraces, hardwood slopes and riverbanks of tributaries to the Ocmulgee, Oconee, and Savannah Rivers.	No
Piedmont barren strawberry (*Waldsteinia lobata*)	Bi, Tw	NFS	T	Rocky acidic woods along streams with mountain laurel; rarely in drier upland oak-hickory-pine woods.	No
Relict trillium (*Trillium reliquum*)	Bi, Bl, Ho, Ma	E	E	Hardwood forests; in the Piedmont, found in either rich ravines or adjacent alluvial terraces with other spring-flowering herbs.	No
Sweet pitcher-plant (*Sarracenia rubra*)	Bi, Ma, Pe	NFS	E	Acid soils of open bogs, sandhill seeps, Atlantic white-cedar swamps, wet savannahs, low areas in pine flatwoods, and along sloughs and ditches.	No

Species Name (Scientific Name)	County[1]	Federal Status[2]	State Status[3]	Preferred Habitat	Habitat Available in Project Area?

[1]County
Bi - Bibb
Bl - Bleckley
Do - Dooly
Ho - Houston
Ma - Macon
Pe - Peach
Pu - Pulaski
Tw - Twiggs

[2]Federal Status
E = Endangered
T = Threatened
CS = Candidate Species
NFS = No Federal Status
BGEPA = Bald and Golden Protection Act

[3]State Status
E = Endangered
T = Threatened
U = Unusual
R = Rare
NSS = No State Status

Source: USFWS 2010.

"Harass" is defined under 50 C.F.R. § 17.3 as acts or omissions, whether intentional or negligent, that annoy wildlife so as to "significantly disrupt behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." "Harm" is defined as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." Thus, potential impacts (in terms of "take") can be evaluated by identifying the life history events of the listed species with potential to be present on or near the Project Site.

3.6 Cultural Resources

The APE includes areas to be affected by new construction, including demolition debris hauled off the site and potential material brought on the 24.5-acre Project Site.

The archeological and cultural resources of RAFB are summarized in the *Integrated Cultural Resources Management Plan* (Ellis Environmental Group 2005). RAFB has been surveyed for archeological sites and historic structures, and the survey work has been reviewed and accepted by the HPD.

An archeological survey of the Project Site was conducted by Garrow & Associates, Inc. (Garrow) in November 1996. The survey included upland portions of a 600-acre tract originally considered for purchase by RAFB. This tract fully encompassed the Project Site. The survey focused on 23 acres of uplands and suspected uplands to determine whether archeological resources were present and considered the existing haul/access roads. The survey used screened shovel tests at 30-meter intervals to locate sites, and then screened tests at 10-meter intervals to determine site boundaries. Four sites were discovered or noted from previous investigations: 9HT10 (lithic scatter), 9HT126 (lithic scatter), 9HT127 (lithic scatter), and 9HT128 (known as the "Wellston Cemetery" or the "Minshew-Thomas-Sullivan Cemetery"). Site 9HT10 was recommended by Garrow (1996) as being potentially eligible for the National Register of Historic Places (NRHP), based on artifact density and diversity. The Garrow (1996) report

recommended cultural resources clearance for the remainder of the upland portions of the Project Site.

According to a letter from the Georgia HPD dated July 24, 2009, HPD indicated that no archeological resources that are listed or eligible for listing on the NRHP would be affected by the G-RAMP project. However, on review of an upland survey area map from the Garrow (1996) report, it appeared that an additional upland area between Sites 9HT126 and 9HT10 warranted investigation, in addition to a re-examination of Site 9HT10, before ground-disturbing activities. As a result, these sites were reinvestigated as part of a Phase II archeological survey by Cultural Resources Analysts, Inc. (CRA) between February 9 and 15, 2011. The executive summary of this report is in Appendix F. Based on the results of the fieldwork, CRA indicated that Site 9HT10 was not considered eligible for inclusion on the NRHP and that no further research was recommended before project construction. CRA indicated that the Archaic occupation level appears intact across much of the Project Site, but concluded that the Project Site lacks potential to provide significant data regarding Archaic period culture and technology because of the lack of vertical integrity, low number of diagnostic artifacts, lack of cultural features, and relative low density of artifacts in general. In a letter from the Georgia HPD dated June 1, 2011, (Appendix B) HPD indicated that Site 9HT10 is not eligible for listing on the NRHP. Therefore, no archeological resources, including Site 9HT10, would be affected by the Proposed Action. RAFB sent letters to 12 potentially affected tribes in April 2012 to communicate the finding on 9HT10 and inquire regarding potential concerns; however, no responses were received (Appendix B).

Site 9HT128 consists of two fenced plots, marked graves outside the plots, and unmarked graves. The use of the cemetery is from 1846 to 1979, based on the markers. According to the Garrow (1996) report, the cemetery does not offer outstanding historical significance or archeological potential, and was recommended as ineligible for the NRHP. Additional cemetery delineation performed by RAFB refined information regarding location of unmarked graves and supported establishment of a 50-foot buffer on the east side of the cemetery plot to be protected from ground-disturbing activities (Appendix G). The cemetery would continue to be preserved in place and protected from future ground-disturbing activities as recommended by Garrow (1996) and advised by Georgia HPD (Appendix B).

Next to the cemetery is a small concentration of bricks and stones that may be remnants of a farmhouse and approximately 5 acres of overgrown pecan orchard noted by Garrow (1996). However, during the Phase I archaeological investigation, these areas within the APE were determined not to possess archaeological integrity for recommendation for inclusion in the NRHP. A delineation of the Wellston Cemetery (Site 9HT128), conducted in 2012 (URS, 2012, see Appendix G), revealed that the Wellston Cemetery has been in use by multiple families over a long period. While it cannot be discounted that unmarked graves could be the remains of persons that lived at structures formerly in the APE, historical records do not indicate that the

Wellston Cemetery functioned as a family cemetery for the inhabitants that may have lived next to the cemetery.

3.7 Socioeconomic Environment

Socioeconomic resources include the basic attributes and resources associated with the human environment, particularly population and economic activity. Economic activity typically encompasses employment, personal income, and industrial growth. In addition, populations of special concern, as addressed by EO 12898, *Federal Action to Address Environmental Justice in Minority and Low Income Populations*, are identified and analyzed for environmental justice impacts. EO 12898 requires a federal agency to "make achieving environmental justice a part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." A message from President Clinton concerning EO 12898 stated that federal agencies should collect and analyze information concerning a project's effects on minorities or low income groups, when required by NEPA. If such investigations find that minority or low income groups experience a disproportionate adverse effect, then avoidance or other management actions are to be implemented. Under NEPA, if disproportionate impacts on minority or low income populations are identified, this determination does not prevent a proposed action from going forward, nor does it compel a conclusion that the action is environmentally unsatisfactory. Rather, identification of such effects should heighten agency attention to alternatives, management actions or mitigation measures, monitoring needs, and preferences expressed by the affected communities or populations (CEQ 1997).

Race and ethnicity are two separate categories of minority populations. A minority population can be defined by race, by ethnicity, or by a combination of the two distinct classifications. According to CEQ (1997), a minority population can be described as the following groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic. The population of an area is considered to be a minority population if it exceeds 50 percent of the population or the minority population percentage is meaningfully greater than the minority population percentage in the general population.

Race, as defined by the U.S. Census Bureau (USCB 2001) includes:

- White – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa
- Black or African American – A person having origins in any of the Black racial groups or Africa
- American Indian or Alaskan Native – A person having origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment

- Asian – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, or the Philippine Islands

- Native Hawaiian and Other Pacific Islanders – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands

USCB (2001) defines ethnicity as either being of Hispanic origin or not being of Hispanic origin. Hispanic origin is defined as "a person of Cuban, Mexican, Puerto Rican, south or Central American, or other Spanish culture or origin regardless of race."

A minority population can be defined in multiple ways. For example, a population under consideration may be demographically composed of 45 percent Black, 6 percent Asian, 40 percent White, and 9 percent all other races or combination of races. In addition, a minority population can also be defined through ethnicity, where the population under consideration is demographically composed of 80 percent White, 10 percent Black, and 10 percent all other races or combination of races, but has an ethnic composition of 98 percent Hispanic origin and 2 percent of the population not of Hispanic origin. Race and ethnicity individually total a population of 100 percent.

Each year USCB defines the national poverty thresholds, which are measured in terms of household income dependent on the number of persons within the household. Individuals falling below the poverty threshold ($17,603 for a household of four in 2000, and $21,954 for a household of four in 2009) are considered low income individuals. USCB (1995) tracts where at least 20 percent of the residents are considered poor are known as "poverty areas." When the percentage of residents considered poor is greater than 40 percent, the census tract becomes an "extreme poverty area."

3.7.1 Economic Activity and Population

The Project Site is located within an area that is undeveloped next to RAFB and the Ocmulgee River floodplain. No residential or commercial development is near the Project Site. Because the Project Site currently has no facilities or operations, no employees or expenditures are associated with it. The Proposed Action would create jobs and foster economic growth and stability in the Middle Georgia region. Middle Georgia is home to RAFB, the state's largest industrial complex covering nearly 7,000 acres and employing more than 21,000 civilian and military personnel. RAFB has an annual economic impact of $3.9 billion, draws employees from 22 counties in Middle Georgia, and has contracts for services with firms in 18 Georgia counties.

The Middle Georgia region includes the Warner Robins Metropolitan Statistical Area (MSA), which includes the cities of Macon, Warner Robins, and Fort Valley. According to the U.S. Bureau of Economic Analysis (BEA) website (BEA 2010), the Warner Robins MSA had a total population of 391,241 in 2008, with a total of 226,403 persons employed.

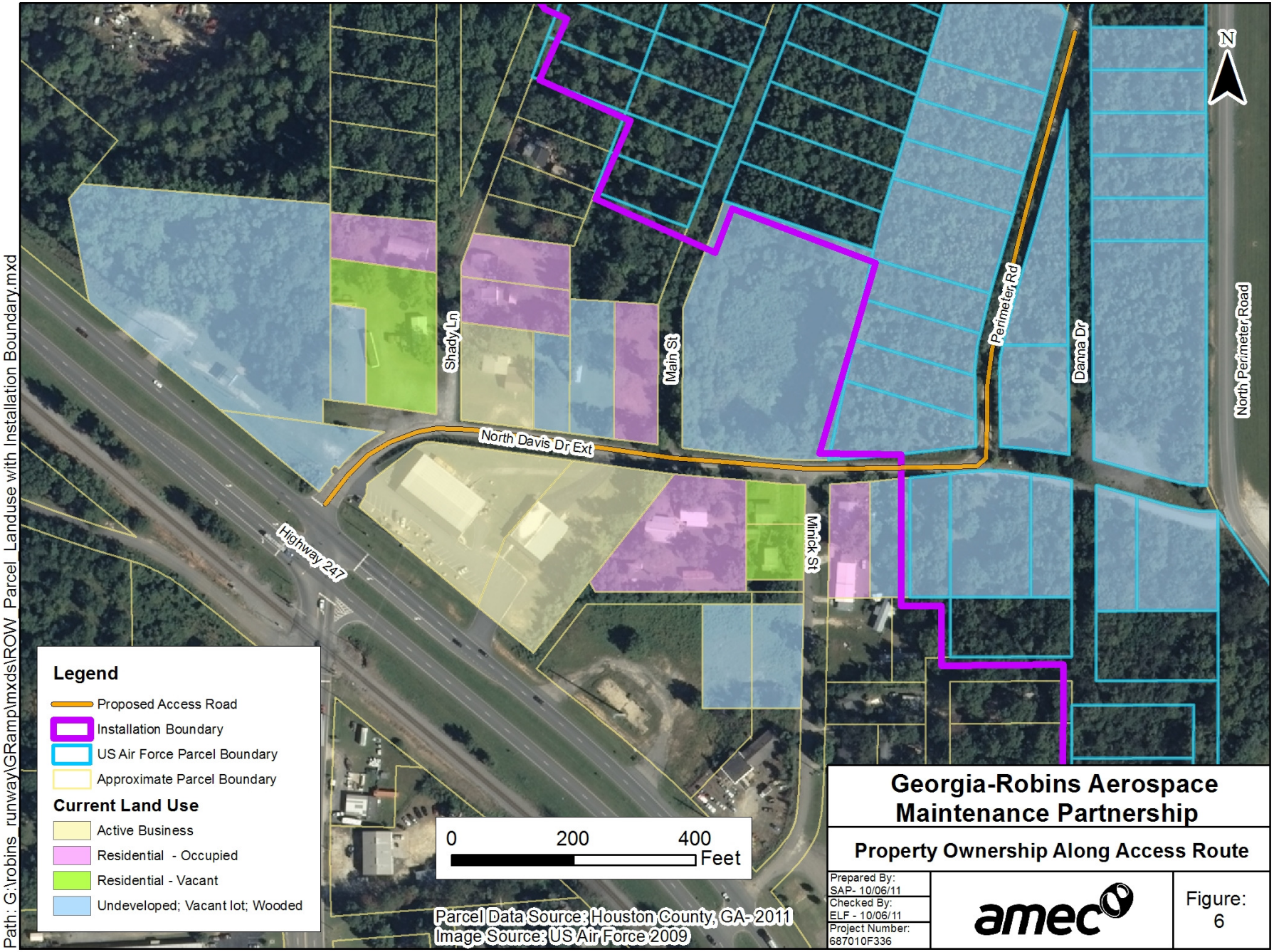
3.7.2 Environmental Justice

Based on a review of USCB (2010) data from the 2000 Census, the City has a population of 58,672 (based on 2009 estimates using census data from 2000). Further, the census tract containing the Project Site has a population of 2,591 (based on 2009 estimates) (USCB 2010). The census tract is approximately 17.7 square miles, encompasses RAFB, and is generally bound by Echeconnee Creek to the north, Sandy Run Creek to the south, Highway 247 to the west, and the Houston County boundary to the east. In addition to RAFB, this census track includes two small neighborhoods west and north of the base. Specific evaluation of potential impacts to low income neighborhoods is limited to the census tract level because USCB (2010) does not release income data at the smaller census block level, which contains a portion of the access route to the Project Site (Figure 6). According to the USCB (2010), forty-five people and 13 household units (13 owned, nine rented) are in this census block. Of the 2,591 people in the census tract, 109 people, or approximately 4 percent, are below the poverty level (USCB 2010). It is assumed in this document that this 4 percent is represented by the two small communities just west and north of the base.

According to USCB (2010), the census block in which the proposed access route travels has a minority population of approximately 56% (five out of nine people are minorities). Further, the census tract containing the Project Site has a minority population of approximately 42 percent. The City has a minority population of approximately 38 percent, and approximately 13 percent of the population is below poverty level (USCB 2010). Houston County has a minority population of approximately 33 percent, and approximately 11 percent of Houston County is below poverty level (USCB 2010). In contrast to USCB data (2010), according to parcel data collected from Houston County (2011), the neighborhood in which the access route travels contains three occupied residential households Figure 6. The remaining properties along North Davis Drive and Perimeter Road consist of residences that are vacant, commercial properties, or undeveloped or vacant lots. Also shown on Figure 6, the USAF owns properties along Perimeter Road.

3.8 Transportation

No adverse transportation issues are currently associated with the Project Site or the immediately surrounding roads. Access to the Project Site is and would be from a secured entrance from North Davis Drive on the west side of RAFB (Figure 2). The current access road is a dedicated City ROW gravel road that is used by staff working at the Ocmulgee River Water Pollution Control Facility No. 1. The gravel access road extends north from North Davis Drive, located east of State Highway 247, along the north end of RAFB to the City's Ocmulgee River Water Pollution Control Facility No. 1. Current traffic volume on the gravel access road is minor. Up to five employees work at and access the Ocmulgee River Water Pollution Control Facility No.


N
Shady Ln
Main St
Perimeter Rd
Danna Dr
North Perimeter Road
North Davis Dr Ext
Highway 247
Minick St
Legend
Proposed Access Road
Installation Boundary
US Air Force Parcel Boundary
Approximate Parcel Boundary
Current Land Use
Active Business
Residential - Occupied
Residential - Vacant
Undeveloped; Vacant lot; Wooded
0
200
400
Feet
Parcel Data Source: Houston County, GA- 2011
Image Source: US Air Force 2009
Path: G:\robins_runway\GRamp\mxds\ROW_Parcel_Landuse with Installation Boundary.mxd
Georgia-Robins Aerospace Maintenance Partnership
Property Ownership Along Access Route
Prepared By: SAP- 10/06/11
Checked By: ELF - 10/06/11
Project Number: 687010F336
amec
Figure: 6

1. Current trip counts for personnel accessing this area are approximated to be one to two roundtrips per day per individual, depending on whether personnel depart during lunch or for other routine trips. In addition, two to three trucks access the facility up to twice a week. Other periodic traffic on this access road may include families accessing the cemetery on the Project Site or hunters accessing the Oaky Woods Wildlife Management Area.

3.9 Safety

Safety issues at RAFB are those that directly affect the protection of human life and property, and principally involve aviation, munitions, and fire prevention. USAF personnel are protected by observing OSHA, Air Force Occupational Safety and Health (AFOSH) standards, and RCRA. Aircraft flight operations and patterns associated with RAFB are conducted in accordance with RAFB's flight operation and safety procedures. No collisions have been recorded at RAFB (URS 2009a). Non-military personnel at the G-RAMP facilities would also be protected by observing OSHA and RCRA regulations.

With respect to construction vehicle traffic, aircraft safety at Taxiway E during construction may be endangered by four principal causes: increased traffic volume, non-standard traffic patterns, vehicles without radio communication and marking, and operators untrained in airfield procedures. RAFB and the City would jointly develop and coordinate a Construction Vehicle Traffic Plan with airport users, air traffic control, and the appropriate construction engineers and contractors. The plan, when signed by participants, should become a part of the contract. Airfield Management and Safety are responsible for coordinating and enforcing the plan.

No adverse safety issues are currently associated with the Project Site.

4.0 Environmental Effects

This section describes the potential environmental effects of implementing the Proposed Action and the No Action Alternative. Potential effects of actions are based on the description of the actions as presented in Section 2.0 and existing environmental conditions at the Project Site as presented in Section 3.0. Environmental effects from the No Action Alternative address effects as they currently occur or could occur in the future without construction of the new G-RAMP facilities.

4.1 Physical Environment

4.1.1 Topography

4.1.1.1 No Action Alternative

Implementation of the No Action Alternative would have no significant adverse or positive effects on the topography at or near the Project Site. Under the No Action Alternative, the topography of the Project Site would remain unchanged because construction would not occur.

While the topography of the Project Site was altered significantly in the past, it is not currently being altered because the Project Site experiences no uses at this time.

4.1.1.2 Proposed Action

While grading of the Project Site would be required to reduce or increase elevation levels, implementation of the Proposed Action would have no significant adverse or positive effects on the Project Site topography. The Proposed Action would require clearing, grubbing, and mass grading to prepare the Project Site for the new infrastructure improvements and the hangar facilities. Excavation would also be required in the area of Joint Stars Road to facilitate the proposed access road and taxiway connection. No additional clearing, grubbing, or grading would be required for access to the Project Site as existing roadways would be used. Topography would not be affected by the installment of the new 12-inch water supply main because it would be placed in the same location as the existing 6-inch main (Figure 4).

Approximately 450,000 cubic yards of earthwork is anticipated to be moved during mass grading to bring the grade of the Project Site to 260 feet AMSL. According to the *Preliminary Engineering Report* (Carter & Sloope 2009), this is the recommended grade for the Project Site. The necessary construction fill and topsoil would be obtained from either the Project Site or an existing commercial source fully permitted under applicable laws protecting the environment. Because of the historical disturbance to the Project Site, primarily due to borrow pit excavations next to the Project Site, the net result of these improvements would have a beneficial effect on topography because the topography would be returned to near-historical levels.

4.1.2 Surface Waters

4.1.2.1 No Action Alternative

Implementation of the No Action Alternative would not cause significant adverse or positive impacts on surface waters because no natural surface water bodies, such as lakes or streams, are located on or next to the Project Site, and construction would not occur.

4.1.2.2 Proposed Action

There are no surface waters, such as lakes or streams, within or next to the Project Site, access route, or location of the water supply main. Therefore, implementation of the Proposed Action would not result in either significant adverse or positive effects on surface waters because construction activities would not occur in or next to natural surface water bodies. Further, Best Management Practices (BMPs) would be used during implementation of the Proposed Action to protect nearby surface waters during construction operations, including surface runoff that drains to storm sewer systems at RAFB. BMPs such as silt fencing, hay bales, and erosion control blankets would be used, as applicable, during construction to control land disturbance and stormwater runoff, avoiding significant adverse impacts on surface waters. Section 4.1.4 includes

discussion of potential impacts on surface waters from soil erosion and stormwater runoff during construction activities.

4.1.3 Floodplains and Wetlands

4.1.3.1 No Action Alternative

Under the No Action Alternative, floodplain characteristics and wetland features would remain unchanged; therefore, implementation of the No Action Alternative would not result in significant adverse or positive effects on these resources within the Project Site.

4.1.3.2 Proposed Action

Floodplain

Implementation of the Proposed Action would result in filling floodplain within portions of the Project Site. The floodplain characteristics within portions of the Project Site would potentially be changed by directly impacting approximately 1.36 acres of the 100-year floodplain (designated as "Zone A" by FEMA). This equates to approximately 3,015 cubic yards of fill material to be placed within the floodplain. Construction of the taxiway ramp/apron to RAFB and the access road to the Project Site would not impact the floodplain (Figure 2). Further, the location of the water supply main is not within the floodplain.

Filling the floodplain would not significantly alter flood elevations because the filled area would lie within the extensive Ocmulgee River flood zone (Figures 1-3). The floodplain storage loss of 1.36 acres would be insignificant compared to the extensive flood storage capacity of the Ocmulgee River floodplain, which has 5,975 acres for that portion of sub-basin west of the Ocmulgee River (URS 2009a). The watershed floodplain would accommodate the loss in storage capacity. Further, loss in storage capacity would not alter the delineation of flood hazard zones outside the Project Site.

Before ground-disturbing activity within the floodplain, the City must evaluate and approve this action. Further, before performing construction projects within a floodplain, USAF must investigate and exhaust potential alternatives that would avoid working within floodplain resources. This requirement is consistent with EO 11988, *Floodplain Management*, and USAF's wetlands/floodplains compliance responsibilities per Air Force Instruction 32-7064. EO 11988 addresses floodplain management and requires that the functions of floodplains be considered in the decision-making process. Adverse impacts on floodplains may be acceptable only if there is no practicable alternative. No practicable alternative that would meet the project requirements was identified for the Proposed Action. Therefore, the Proposed Action must be located within a small portion of the floodplain. Implementation of the Proposed Action would require a Letter of Map Revision (LOMR) from the City to FEMA.

Wetlands

The Proposed Action would avoid impacts to wetland features. Further, construction of the taxiway ramp/apron to RAFB, improvements to the access road, and replacement of the water supply main would not impact wetlands. Wetlands next to construction activities would be identified and protected with fencing and other erosion control measures, as described further under Section 4.1.4 (Stormwater).

During project implementation, should it be determined that adjacent wetland areas would be encroached and impacted by the Proposed Action, a Pre-Construction Notification (PCN) (for impacts 0.5 acre or less) would be submitted to USACE for approval before impacts. The PCN is commonly submitted simultaneously with the JD package. The Proposed Action could be authorized under Nationwide Permit (NWP) 39 (*Commercial and Institutional Developments*).

If the project would impact less than 0.1 acre of jurisdictional wetlands, then no compensatory mitigation would be required as a part of the PCN. For wetland impacts greater than 0.1 acre, compensatory mitigation would be required and would likely consist of the purchase of wetland mitigation credits from a USACE-approved wetland mitigation bank. If compensatory mitigation is required, the City would be responsible for purchasing the credits from the approved mitigation bank after the USACE has approved the permit and before construction. Additional mitigation measures might include preservation/conservation of wetlands in the project vicinity, or purchase of in-lieu fees from USACE.

The access route owned by the City into the G-RAMP area follows the present City route of a dirt road to the City water treatment facility. The road crossed the base to the north of the runway, and extends along a route outside the base along the eastern perimeter. The dirt road is above the wetlands/floodplains that are adjacent to the G-RAMP site. Activities related to construction of improvements and vehicular traffic on the road may be expected to expand along the edges of the road into the adjacent wetlands/floodplains. The impacts would be limited to this extent, and would present substantially fewer impacts than might be expected from building a new road through the wetlands/floodplains.

4.1.4 Stormwater

4.1.4.1 No Action Alternative

Implementation of the No Action Alternative would not cause significant adverse or positive effects on stormwater quality because construction and implementation would not occur and there would be no changes to stormwater runoff on the Project Site.

4.1.4.2 Proposed Action

Implementation of the Proposed Action would result in an increase in the volume of stormwater runoff because construction activities would result in an increase of impervious surface within

the Project Site. It is anticipated that the Proposed Action would not cause significant adverse or positive effects on stormwater because permitting and environmental requirements would be met and appropriate BMPs for protecting surface water from sedimentation effects would be in place during construction, as described below.

According to the *Preliminary Engineering Report* (Carter & Sloope 2009), stormwater runoff from the Project Site would be collected and conveyed to a stormwater treatment pond, which would provide sediment storage during construction and provide water quality treatment, flow, and velocity control for the developed Project Site. The design would conform to, and the work would be performed in accordance with, the *Georgia Stormwater Management Manual* (Appendix C), the project specifications, and the project details to protect downstream waterways and existing stormwater conveyance systems during and after construction. Application for a Land Disturbing Activity Permit from Houston County would be submitted before construction.

The permit process also includes submission of a Notice of Intent (NOI) for permit coverage under National Pollutant Discharge Elimination System (NPDES) Permit GAR100001 (approval to discharge stormwater associated with construction activity), which would be obtained through GA EPD. As required by the NPDES permit, an Erosion, Sediment, and Pollution Control Plan (ESPCP) would be developed and implemented during the project. Approval by GA EPD would be required if more than 50 acres of area is disturbed. The ESPCP would be written in accordance with the Georgia Soil and Water Conservation Commission's (GSWCC's) *Manual for Sediment and Erosion Control in Georgia, 5th Edition* (GSWCC 2000). The Proposed Action would also comply with applicable county water protection ordinances because a Houston County Sediment and Erosion Control Permit would be obtained, land disturbance fees would be submitted to GA EPD and Houston County, BMPs would be implemented, and Notice of Termination would be submitted to GA EPD following conclusion of work when Project Site conditions meet the definition of "final stabilization."

Erosion and sediment control measures would be implemented as required for land disturbing activity permits. Use of BMPs such as silt fencing, hay bales, and erosion control blankets, as applicable, would be implemented during construction activities to control stormwater runoff. These construction activities include improvements to the access road and replacement of the water supply main. These sediment barriers, consisting of approved materials, would be installed along the perimeter of the construction site, downslope of construction activities and at drainage inlets. Additional erosion and sediment control measures would be installed if deemed necessary by on-site inspection as construction activities progress. Sediment control barriers would be monitored, and the excess sediment would be removed and spread on-site. Sediment and erosion control measures would remain in place and be maintained until the disturbed areas are stabilized with permanent vegetation. Grading and excavation would be scheduled to reduce the exposure of bare soils to erosive elements.

Further, the Proposed Action would comply with the EISA, Section 438, requiring use of LID techniques during construction, which is consistent with USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects Under Section 438 of the Energy Independence and Security Act* (USEPA 2009) (Appendix C). LID techniques would be determined as appropriate during the design review process. The EISA, Section 438, requires that the overall design objective for each project is to maintain predevelopment hydrology and avoid net increase in stormwater runoff. DoD defines "predevelopment hydrology" as the pre-project hydrologic conditions of temperature, rate, volume, and duration of stormwater flow from the Project Site. The analysis of the predevelopment hydrology must include site-specific factors (such as soil type, ground cover, and ground slope) and use modeling or other recognized tools to establish the design objective for the water volume to be managed from the Project Site. EISA, Section 438, also requires that Project Site design options be evaluated to achieve the design objective to the maximum extent technically feasible. The "maximum extent technically feasible" criterion requires full employment of accepted and reasonable stormwater retention and reuse technologies (e.g., bio-retention areas, permeable pavements, cisterns/recycling, and green roofs), subject to Project Site and applicable regulatory constraints (e.g., Project Site size, soil types, vegetation, demand for recycled water, existing structural limitations, and state or local prohibitions on water collection).

4.1.5 Geology and Soils

4.1.5.1 No Action Alternative

Under the No Action Alternative, geology and soil characteristics would remain unchanged; therefore, implementation of the No Action Alternative would not result in significant adverse or positive effects on geology and soil characteristics within the Project Site.

4.1.5.2 Proposed Action

Implementation of the Proposed Action would not result in significant adverse or positive effects on geologic features because construction activities would occur at or near the ground surface. Fill material would be required to bring portions of the Project Site to grade. The potential for soil erosion to adversely affect surface water quality would be reduced through the application of appropriate BMPs during construction, and adherence to NPDES permit requirements, as discussed in Section 4.1.4.2. BMPs applied during construction activities, such as silt fencing, hay bales, and erosion blankets, would control soil erosion and avoid significant adverse effects on the quality of stormwater runoff.

4.1.6 Groundwater

4.1.6.1 No Action Alternative

Implementation of the No Action Alternative would not result in either significant adverse or positive effects on groundwater because there would be no changes to groundwater resources.

4.1.6.2 Proposed Action

Implementation of the Proposed Action would result in near-ground-surface activities and would not significantly affect groundwater.

As a result of the RFI (Earth Tech/Rust E&I 1999), the downgradient boundaries of the chlorinated solvent plumes were determined to be discharging into the wetlands east of RAFB, just north of the Project Site. (The BTEX plume was also further defined in the RFI and was described as moving along the same flow path as that of the chlorinated solvent plume.) Consequently, because of the direction of the plume, it is not anticipated that this plume would be encountered within the Project Site. According to the RFI (Earth Tech/Rust E&I 1999), exposure to the chlorinated solvent plume is limited because there are no potential human exposure points except casual contact by recreationists (i.e., hunters, fishers, and hikers) within the wetland areas hydraulically downgradient of RAFB. In addition, there are no drinking water wells impacted by the chlorinated solvent plume. Although not likely, future exposure to groundwater may occur using a water well that could be installed in the Providence Formation in the future. However, the Proposed Action would result in use of the City's water supply via a water supply main extension that would connect to an existing 12-inch main at North Davis Drive and Tabor Drive. Analytical results of the existing well located on the Project Site indicated that no contamination was detected (Appendix A of Earth Tech/Rust E&I 1999). Therefore, the Proposed Action is not anticipated to result in adverse effects from exposure to the groundwater plume within the Project Site.

In addition, GA EPD has indicated that NFA was required of RAFB with respect to the groundwater contamination. An NOD indicating NFA was issued by GA EPD on September 12, 2002, and is in Appendix E.

4.1.7 Water Supply and Drinking Water

4.1.7.1 No Action Alternative

Implementation of the No Action Alternative would not cause significant adverse or positive effects on water supply or drinking water because construction and implementation would not occur and there would be no changes to these resources on the Project Site.

4.1.7.2 Proposed Action

Implementation of the Proposed Action would not adversely affect the existing water supply because the local water supply would not be significantly affected by the proposed improvements. Water from the existing well on the Project Site would not be used. The flow and pressure required by the Proposed Action would be provided by the water system improvements proposed for the project area.

4.2 Air Quality

4.2.1 No Action Alternative

There would be no changes to air emissions under the No Action Alternative because construction and operation of the Proposed Action would not occur. Implementation of the No Action Alternative would not result in either significant adverse or positive effects on air quality.

4.2.2 Proposed Action

The primary means by which the protection and enhancement to air quality is accomplished is through maintaining the NAAQS. To accomplish this, construction of new air emission sources must go through the Georgia Environmental Protection Division (EPD) – Air Protection Branch State Implementation Plan (SIP) construction permit program. Depending on the potential to emit (PTE) of the Proposed Action, a construction permit may need to be issued before construction can begin. If PTE emissions of $PM_{2.5}$, PM_{10}, SO_2, CO, NO_x, or VOC exceed 100 tons per year or if total HAPs exceed 25 tons per year, or an individual HAP PTE exceeds 10 tons per year, a major source Title V operating permit must be obtained.

Construction activities associated with the Proposed Action would involve operation of heavy equipment during construction, transport of fill material, and an increase in vehicular traffic trips from construction crews. These activities would temporarily increase emissions of carbon monoxide, hydrocarbons, particulate matter, and nitrogen dioxide. However, because these emissions would be temporary and relatively limited in quantity and duration, they would be considered insignificant. Further, construction of the Proposed Action would not cause significant adverse impacts on air quality from fugitive dust emissions because BMPs would be implemented daily during construction activities. BMPs would include procedures for wetting disturbed portions of the project areas to control dust emissions during periods of excessive dryness, thereby avoiding significant adverse impacts.

Implementation of the Proposed Action would increase air emissions because there would be an increase in emissions from employee personal vehicles. However, these mobile emission sources would not significantly change air emissions in the vicinity compared to the current total emissions associated with RAFB operations, and would not increase ambient air pollution concentrations above NAAQS. Air emissions would also increase because of aircraft repair and

maintenance operations, and movement of aircraft along taxiways. Maintenance and repair of aircraft would be the primary sources of air emissions and would be similar to operations already conducted at RAFB. Sources of air emissions could include paint stripping, painting, electroplating, degreasing, and engine testing. Activities contributing to the primary sources of air emissions could include painting and de-painting operations, solvent cleaning, and chromium plating and anodizing. Other sources could include fuel storage tanks, peaking power generators, boilers, and various sources of fugitive VOCs. The amount of air emissions cannot be calculated because the level of future operations at the Project Site cannot be determined at this time. However, based on the future maintenance, repair, and operations of two C-17 or C-5 aircraft at the Project Site, it is anticipated that the amount of particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, HAP, and VOC emissions would be significantly less than the emissions coming from operations at RAFB, and that these emissions would not result in violations of the NAAQS.

Air quality in Houston County, which includes RAFB and the Project Site, is classified as an "attainment" area (i.e., pollutant levels are below the NAAQS), and as such, conformity is not applicable. USEPA is currently considering lowering the NAAQS for certain air pollutants. If NAAQS were to be lowered, Houston County would go into nonattainment status. GA EPD would be required to revise the SIP and to promulgate the new regulations. However, this would be a lengthy process that is not anticipated to affect the air quality analysis in this document.

In 2010, CEQ provided a draft guidance memorandum for federal agencies to consider whether analysis of greenhouse gas (GHG) emissions from proposed actions may provide meaningful information to decision makers and the public as a part of the NEPA process. Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of carbon-dioxide-equivalent GHG emissions annually, or if long-term GHG emissions could be significant, agencies should consider the potential for impacts. Because the Proposed Action is not expected to produce significant quantities of GHG emissions, no additional consideration of GHG emissions is included in this EA.

Based on the above-described assessment, implementation of the Proposed Action would not significantly increase air emissions at or near the project area and would not be expected to cause violations of the NAAQS.

4.3 Waste Management and Toxic Materials

4.3.1 Wastewater

4.3.1.1 No Action Alternative

There would be no changes to sanitary or industrial wastewater generation under the No Action Alternative because construction and operation of the Proposed Action would not occur.

Implementation of the No Action Alternative would not result in either significant adverse or positive effects on wastewater.

4.3.1.2 Proposed Action

Sanitary wastewater would be generated at the new facilities associated with the Proposed Action. Based on the creation of 150 new jobs at the G-RAMP facilities, it is anticipated that the impact on the City's Ocmulgee River Wastewater Treatment Plant No. 1 would not be significant based on the plant's capacity of 3 million gallons per day (MGD) and the current operating average of approximately 1.2 to 1.5 MGD. The plant provides domestic sewage treatment for City customers and would also treat sewage from the Proposed Action. Because it is anticipated that the additional sanitary wastewater generated by the Proposed Action would be insignificant compared to the number of current customers and wastewater volume currently generated, the new facility operations would not cause significant adverse impacts on the sanitary wastewater system. It is not anticipated that industrial wastewater would be generated at the proposed facilities; however, should industrial wastewater be generated at the Proposed Project, such wastewater would be in compliance with the City's Wastewater Pretreatment Program for industrial dischargers. Operations at the proposed facilities would not produce significant adverse or positive effects on sanitary and industrial wastewater generation.

4.3.2 Solid Waste

4.3.2.1 No Action Alternative

No significant adverse or positive impacts on solid waste would occur under the No Action Alternative because solid waste would not be generated.

4.3.2.2 Proposed Action

Implementation of the Proposed Action would not result in significant adverse or positive impacts on solid waste or the physical environment as it relates to solid waste. Solid waste would be sent to the Houston County landfill, which would provide solid waste disposal services. This landfill is a permitted municipal solid waste landfill with 8 years of useful life remaining, and a permitted construction and demolition landfill with 35 years of useful life remaining (GA EPD 2009). The landfill could acquire approximately 50 years of additional capacity through expansion if needed (URS 2009b). Therefore, adequate space is available in the Houston County landfill for the solid waste that would be generated from the Proposed Action. Waste materials containing asbestos or lead would be handled in accordance with applicable regulations (Section 4.3.4.2).

Solid waste (e.g., office-type and shop-related waste) generated from implementation of the Proposed Action would be similar in amount and type to that currently generated by similar operations at RAFB. Based on the creation of 150 new jobs at the G-RAMP facilities, the amount of solid waste that would be generated would be insignificant compared to the

population in the Warner Robins MSA and the number of personnel at RAFB. Solid wastes would be recycled to the extent possible and would not cause significant adverse environmental effects.

4.3.3 Hazardous Materials and Waste

4.3.3.1 No Action Alternative

Under the No Action Alternative, use of hazardous materials and generation of hazardous waste would not occur. The No Action Alternative would not cause significant adverse or positive environmental effects related to hazardous materials and hazardous waste.

4.3.3.2 Proposed Action

Implementation of the Proposed Action would not result in significant adverse or positive environmental effects related to hazardous materials or hazardous waste. Implementation of the Proposed Action may result in the generation of hazardous wastes including petroleum products, such as hydraulic fluid mixed with used oil and hydraulic fluid mixed with solvent. Waste streams at the new hangar facilities could include rags, adhesives, dried paint, and paint thinner. The exact amount of this waste that would be generated annually from the Proposed Action cannot be determined at this time. However, based on the future maintenance, repair, and operations of two C-17 or C-5 aircraft at the Project Site, it is anticipated that hazardous waste generation be would comparable to that at existing hangar facilities at RAFB.

RCRA requires anyone who owns or operates a facility where hazardous waste is treated, stored outside the limits of 40 CFR 262.34, or disposed of to have a permit. A storage permit is not required for storage of hazardous waste under 90 days. RCRA establishes a procedure for obtaining interim status, which allows existing facilities to continue operating until a final hazardous waste permit is issued. Hazardous waste generators are required to notify GA EPD of regulated waste activities. The hazardous waste generator/property owner is required to obtain a USEPA Identification Number by completing and submitting USEPA Form 8700-12 for initial notifications. GA EPD would be consulted for specific guidance on this issue.

Hazardous waste generated by the Proposed Action would be managed and disposed of pursuant to the RCRA S*tandards Applicable to Generators of Hazardous Waste* (40 CFR 262) and Georgia Rule 391-3-11, *Hazardous Waste Management*. Further, hazardous materials would be stored and handled in accordance with OSHA regulations, 29 CFR 1910.1200(e)-(h), *Hazard Communication.* Construction of facilities for the Proposed Action (e.g., hangars and parking areas) is not anticipated to generate hazardous waste.

4.3.4 Toxic Materials

4.3.4.1 No Action Alternative

Implementation of the No Action Alternative would not cause significant adverse or positive environmental effects related to toxic materials and toxic waste because these materials would not be generated. The Phase 1 ESA (Preston 2006b) conducted for the Project Site did not address radon, ACM, LBP, or lead in drinking water. ACM or LBP is unlikely to be present within the location of the old abandoned home site at the south end of the Project Site. If potential toxic materials are present on the Project Site, these materials would not be affected and it is highly unlikely that they would affect the environment given the small size of the abandoned home.

4.3.4.2 Proposed Action

No PCB-containing equipment is located within the boundaries of the Project Site (Preston 2006b). Implementation of the Proposed Action would have no significant adverse or positive effects on toxic materials or toxic waste, or the environment as it relates to these materials. Remnants of the abandoned home that could be disturbed at the Proposed Site would be assessed by pre-demolition inspections/surveys before demolition activities. If susceptible materials are encountered, these materials would be tested and characterized, and if identified as ACM or LBP, the toxic materials or waste would be removed, managed, and disposed of in accordance with applicable regulations. Operation of the hangar facilities would not involve use of equipment containing PCBs, ACM, or LBP. The use of these materials in new construction would be prohibited. Therefore, operation of the proposed hangar facilities would not result in significant adverse impacts on the environment related to toxic materials.

4.4 Noise Environment

4.4.1 No Action Alternative

Implementation of the No Action Alternative would not result in significant adverse or positive effects on the noise environment, which would not change from its current condition.

4.4.2 Proposed Action

Construction activities would not result in significant adverse impacts on the noise environment because these activities would be short-term, localized, and sufficiently distanced from the nearest sensitive noise receptors. Construction at the Project Site would occur in and near the elevated noise environment of the flight line area (Taxiway E). The nearest noise receptors would be the buildings south of the existing Joint Stars Road. Replacement of the 6-inch water supply main would occur along existing roads that experience traffic noise. Sensitive noise receptors (buildings and homes west of RAFB) would be protected by the City's noise ordinance. According to Section 13-67 of Article IV, Chapter 13, of the City's Municipal Code,

construction activities are to occur between the hours of 7:00 a.m. and 6:00 p.m. weekdays, except in cases of urgent necessity, for which the City engineer may grant a permit for a period not to exceed 60 days. Further, if the City engineer determines that public health and safety would not be impaired by the construction activity between the hours of 6:00 p.m. and 7:00 a.m., and that loss or inconvenience would result to the party of interest, the City engineer may grant permission for this work during these hours. An application for a permit for such work must be made at the time the permit for work is awarded, or during the progress of work.

Construction personnel would wear ear protection in accordance with DoD and OSHA health and safety requirements, where applicable, for construction activities requiring this level of protection.

Implementation of the Proposed Action would also not result in significant adverse impacts on the noise environment. No increase in flight operations is anticipated. Noise from future operations at the new hangar facilities would be generally consistent with that from existing and surrounding operations. Personnel at the new facilities would be exposed to noise from the aircraft at the Project Site, from surrounding streets, and from the nearby airfield at RAFB. According to the AICUZ study (USAF 1998), the Project Site is subject to noise levels between 70 and 80 dB. It is anticipated that non-aircraft-related sound levels generated at the Project Site would typically be below the AFOSH-established exposure limit of 85 dB (by 8-hour time weighted average) (URS 2009b). Aircraft operations at the Project Site may generate noise that exceeds 80 dB; however, personnel would expect these elevated noise levels and would be protected in accordance with DoD and OSHA health and safety requirements, where applicable. Noise levels exceeding 85 dB would require use of personal protective equipment to protect hearing (URS 2009b).

4.5 Biological Environment

4.5.1 No Action Alternative

Implementation of the No Action Alternative would not result in significant adverse or positive effects on the biological environment because no natural resources would be disturbed.

4.5.2 Proposed Action

Implementation of the Proposed Action, including construction of the taxiway ramp/apron and access road to RAFB, would not result in adverse effects on endangered, threatened, or sensitive species because these species are not expected to occur on the Project Site. These species are not known to occur on the Project Site, and/or habitats supporting most of these species are not present within the Project Site, or along the access route or water supply main route. On rare occasions, bald eagles and wood storks have been observed on or near in the Project Site, but neither of these species has been observed nesting or roosting on the Project Site (Sargent 2011), as described in Section 3.2. Because vegetation would be removed during construction, in the

unlikely event that roosting or resting bald eagles or wood storks were to be observed, construction activities in the immediate vicinity would cease, and the construction manager would immediately contact the City. The City would send a qualified representative to visit the discovery site, the resource would be recorded and evaluated, and appropriate avoidance measures (e.g., temporary buffer) would be determined as necessary.

Potential habitat for the alligator snapping turtle is located next to the Project Site. This species has not been observed and is not anticipated to be present on the Project Site (Sargent 2011). The alligator snapping turtle is large and conspicuous and, if present, would be readily observable. In the unlikely event that a snapping turtle is observed on the Project Site during project implementation, construction activities in the immediate vicinity would cease, and the construction manager would immediately contact the City. The City would send a qualified representative to visit the discovery site, the resource would be recorded and evaluated, and appropriate avoidance measures would be determined as necessary.

The Proposed Action would not result in significant adverse impacts on common wildlife and vegetation resources. Impacts on common wildlife species would include an increase in noise and traffic, and loss of habitat. The Project Site is highly disturbed from historical soil borrowing, logging, and clearing activities that either occurred on-site or immediately next to the site. Therefore, high-quality habitat and significant vegetation and wildlife resources are not present throughout most of the Project Site. However, the Proposed Action would involve clearing of trees and other vegetation, which would decrease the amount of forested habitat available to common wildlife species and would displace wildlife to surrounding areas. It is unlikely that clearing vegetation within the Project Site would have a negative impact on the current common wildlife species, which would likely be displaced to surrounding habitats of greater quality. The mixed bottomland hardwood forest and bottomland hardwood swamp communities that surround the Project Site are of much higher quality than the Project Site (RAFB 2007). Potential impacts on wetlands and floodplains are discussed in Section 4.1.3.

4.6 Cultural Resources

4.6.1 No Action Alternative

The No Action Alternative would not result in significant adverse or positive effects on cultural resources because construction activities would not occur. Cultural resources are not being impacted at the Project Site, and these resources would continue to be protected as required by federal and state agencies.

4.6.2 Proposed Action

The Proposed Action has been coordinated under provisions of the National Historic Preservation Act (NHPA), Section 106 (as amended). As part of the Section 106 process, the APE was investigated to identify if historic properties were present. Four archaeological sites

have been identified within the APE. The sites, located within the APE, are not eligible for inclusion in the NRHP. The result is that no historic properties are present within the APE.

Archeological investigations of the Project Site in 1996 (Garrow), in 2011 (CRA), and by RAFB in 2012 determined that there are no sites potentially eligible for listing on the NRHP (Appendix F). The Garrow (1996) report recommended cultural resources clearance for the remainder of the upland portions of the Project Site. Further, the Garrow (1996) report recommended a formal delineation of the cemetery to ensure proper preservation. The CRA (2011) report provided results of the recommended clearance and indicated that no further research before construction is recommended.

While Site 9HT128 is not an NRHP eligible site, it will be protected from disturbance with a 50-foot undisturbed buffer and a new permanent fence, which would be installed before construction. In 2012, the boundaries of Site 9HT128 were delineated using information from local informants, a pedestrian survey, and archaeological probing (URS, 2012; Appendix G). While the cemetery boundaries were established during this investigation, the Georgia HPD has advised, in a letter dated August 1, 2012, (Appendix B) that a 50-foot buffer be placed on the east side of the cemetery plot. This buffer zone is not part of the cemetery boundary but will serve as a precautionary measure to protect potential unmarked graves.

During construction activities, should human remains be identified, excavation activities would cease and plans would be developed to address the discovery. Construction personnel would be directed to avoid the site of discovery and immediately contact the City. Work in the area of discovery would stop until the Project Site could be investigated. The City, with RAFB, would send a qualified representative to visit the discovery site, the resource would be recorded and evaluated, and the effects would be managed in consultation with RAFB as necessary.

4.7 Socioeconomic Environment

Potential socioeconomic impacts are considered major if the Proposed Action would cause:

- Substantial gains or losses in population and/or employment;
- Disequilibrium in the housing market, such as severe housing shortages or surpluses, resulting in substantial property value changes; and/or
- Disequilibrium in the quality of life, such as severe shortages of hospitals, emergency response services, and schools

Potential environmental justice impacts are considered major if the Proposed Action would cause disproportionate effects on low income and/or minority populations.

4.7.1 No Action Alternative

Under the No Action Alternative, no additional jobs would be created and there would be no input of economic growth. Based on the City's economic impact analysis, the Proposed Action has the potential to create up to 1,650 jobs with an estimated impact of $36.5 million per year from 2011 to 2040 (Carbon 2008). The immediate need of approximately 150 new jobs would create revenues of more than $3.8 million per year from project commencement to 2038 (Carbon 2008).

The No Action Alternative would not meet the purpose and need for the Proposed Action, which is intended to improve aircraft availability and reduce operational and sustainment costs. Further, under the No Action Alternative, additional jobs would not be created and there would be no input to economic growth and stability in the Middle Georgia region. Therefore, the No Action Alternative would result in an adverse, although insignificant, impact on the socioeconomic environment. Compared to the economy associated with RAFB and the Warner Robins area, the socioeconomic environment would not change significantly under the No Action Alternative because RAFB would continue to exert a significant positive impact on the economy of the Middle Georgia region of influence.

Minority and low income populations would not be significantly, adversely, or positively impacted under the No Action Alternative. Further, there would be no significant environmental health or safety risks to children. Therefore, implementation of the No Action Alternative would result in neither significant positive nor significant negative effects on the local socioeconomic environment.

4.7.2 Proposed Action

4.7.2.1 Economic Development and Demographics

Construction and operation of the Proposed Action, including activities on the access road, would provide additional economic stimulus to the Middle Georgia region, resulting in positive impacts on the socioeconomic environment, including 150 new jobs at the new facility. Mercer University partnered with the Middle Georgia Regional Commission to develop an employment multiplier model for a study area consisting of the Macon – Warner Robins – Fort Valley, GA, Combined MSA. A minimum requirements technique was used for the analysis. This technique uses industry-level data for a group of comparable MSAs in building an employment multiplier. The multiplier model was developed using data available through BEA (2010). BEA uses the North American Industry Classification System for regional economic data comparisons. This analysis used BEA data from 2008. According to the BEA (2010) website, the Warner Robins MSA had a population of 391,241 in 2008, with 226,403 people employed. According to the analysis, the economic impact multiplier for the combined MSA in 2008 was 2.5. This means that for each job created/lost at RAFB, an additional 1.5 jobs will be created/lost in the local economy. The Proposed Action would also provide a short-term beneficial economic effect on

the regional economy from new construction expenditures. As a result of construction activities, potential short-term employment opportunities may be expected through contractor jobs. These jobs would likely use the local labor force and not require relocation of labor force from outside the Warner Robins MSA.

4.7.2.2 Environmental Justice

Disproportionate environmental impact occurs when the risk or rate for a minority population or low income population from exposure to an environmental hazard exceeds the risk or rate of the general population and, where available, to another appropriate comparison group (EO 12898). Although potential impacts, such as traffic and noise, may occur within the general setting of the Proposed Action and along the access route/water supply main route, the census tract of the area (RAFB and neighborhoods west and north of RAFB) has a low percentage of minority and low income populations and is not expected to be disproportionately affected.

According to USCB (2010), the census block in which the proposed access route travels has a minority population of approximately 56 percent (five of nine people are minorities). Comparatively, the larger census tract containing the Project Site has a minority population of approximately 42 percent, the City has a minority population of approximately 38 percent, and Houston County has a minority population of approximately 33 percent (USCB 2010). If using the USCB (2010) data, the percentage of minority populations along the access route would be comparable to surrounding areas. If comparing minority populations using the Houston County parcel data (2011), the percentage of minorities along the access route may be smaller because these data indicate that there are three occupied residential households along the access route, with the remaining properties along North Davis Drive and Perimeter Road consisting of vacant residences, commercial properties, or undeveloped or vacant lots (Figure 6).

Of the 2,591 people in the census tract containing the Project Site, 109 people, or approximately 4 percent, are below the poverty level (USCB 2010). As stated under Section 3.7, it is assumed that a high proportion of residents in the two small communities just west and north of the base, including the community along the access route, are below the poverty level. However, the poverty level of the neighborhoods next to the Project Site is low when compared to 13 percent of the population below the poverty level in the City and 11 percent of the population below poverty level in Houston County (USCB, 2010). Furthermore, using the Houston County parcel data (2011), the estimates of population below the poverty level along the access route may be smaller.

The potential effects of the Preferred Alternative have been evaluated in accordance with the requirements of EO 12898. No adverse disproportionate effects on minority or low income populations would occur.

Overall, the Proposed Action would not result in significant adverse socioeconomic impacts. Impacts associated with access to the Project Site during both construction and implementation

would be considered insignificant. Potential economic impacts from the Preferred Alternative are considered long-term beneficial.

4.8 Transportation

4.8.1 No Action Alternative

Under the No Action Alternative, there would be no significant adverse or positive effects on transportation because local traffic patterns and volume near the Project Site would remain unchanged.

4.8.2 Proposed Action

The Proposed Action would have no significant adverse or positive effect on transportation. During construction, there would be a temporary, insignificant increase in traffic from construction vehicles, including trucks hauling clean fill material to be placed on the Project Site. Replacement of the water supply main may also temporarily impact traffic (e.g., temporary lane closures or road detours) but not to a significant degree. The anticipated period of construction of the G-RAMP facilities and associated infrastructure improvements would be four to five years. Access to the Project Site during construction is anticipated to be from the gravel access road located outside the RAFB security fence (Figure 2). Access would be primarily for construction vehicles and equipment. Contractors and heavy equipment operators would adhere to applicable safety regulations and guidelines. As stated in Section 3.8, construction personnel may be required to park at off-site parking facilities and to access the Project Site using a City-provided shuttle service. This would assist in reducing dust impacts to residential/commercial buildings along the access route and to RAFB. For construction personnel accessing the Project Site, traffic counts during construction activities would depend on the use of the shuttle service, but are anticipated to be minimal. Determination of access and security would depend on lease ownership of the G-RAMP facilities.

Regarding construction traffic near Taxiway E, RAFB and the City would jointly develop and coordinate a Construction Vehicle Traffic Plan with airport users, air traffic control, and the appropriate construction engineers and contractors. The plan, when signed by the participants, would become part of the contract. Airfield Management and Safety are responsible for coordinating and enforcing the plan.

During operation of the Proposed Action, traffic flow from State Highway 247 and North Davis Drive is expected to increase near the Project Site. The exact number of future employees working at the G-RAMP facilities is not known at this time; however, it is assumed for this analysis that up to 150 new jobs would be created at the new facility. As such, it is anticipated that the number of additional personnel would be insignificant considering the existing traffic from the approximately 25,584 people who access the base daily (URS 2009b). The overall

traffic at or surrounding RAFB is not expected to increase significantly as a result of the Proposed Action. Ample parking space would be available at the new facilities.

4.9 Safety

4.9.1 No Action Alternative

Under the No Action Alternative, there would be no significant adverse or positive effects on safety because conditions at the Project Site would remain unchanged.

4.9.2 Proposed Action

The Proposed Action would have no significant adverse or positive effect on safety. Personnel driving the access route to and from the Project Site (during construction and implementation of the Proposed Action) would be expected to adhere to local traffic laws, including adherence to the posted speed limit. As stated in Section 3.9, military and non-military personnel working at the Project Site would be protected by observing OSHA and RCRA regulations. Military personnel at the G-RAMP facilities would also be protected by observing AFOSH standards. Aircraft flight operations and patterns associated with RAFB would be conducted in accordance with RAFB's flight operation and safety procedures.

4.10 Cumulative Impacts

CEQ regulations stipulate that potential environmental impacts resulting from cumulative impacts should be considered in the EA. A cumulative impact is the impact on the environment that results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, currently under construction, recently completed, or anticipated to be implemented in the near future is presented below. These projects are located on RAFB. No other projects outside the immediate vicinity of RAFB have been considered in this analysis because the Project Site is located on the east side of RAFB, where there are no current or anticipated land uses such as residential or commercial development.

- **116 Air Control Wing (ACW) Mission Support Group (MSG) Facility (past):** The recently completed 116 ACW MSG facility was constructed to consolidate 116 ACW assets within the East Ramp Campus in accordance with the 116 ACW Area Development Plan to consolidate ACW's components. Support functions that were located on the West Ramp were relocated to a new facility on the East Ramp. The 36,500-square-foot, one-story facility and associated parking lot were constructed on undeveloped land north of East Drive. Support personnel relocated to the new facility from their former West Ramp and work locations. The development of the site increased the area of impermeable land surface on the East Ramp and resulted in a temporary increase in air emissions, noise, and volume of solid waste generated by demolition/construction activities. Analysis of potential environmental effects from this

action resulted in a FONSI on the natural or human environment from construction and operation of the MSG facility.

- **Relocation of Marine Corps Units from Naval Air Station Atlanta (past):** This project involved the relocation of Marine Corps Units (MAG-42, HMLA-773, and MALS-42) from Naval Air Station Atlanta to the RAFB East Ramp Campus. As part of the relocation, existing buildings were renovated, one building was demolished, and a new helicopter maintenance hangar and parking areas were constructed on the east side of the East Ramp Campus area. Beale Drive was realigned to accommodate the new facilities. Operations are conducted by approximately 200 to 300 Marine Corps personnel at RAFB 5 days per week, and focus on maintenance of 18 H-1 helicopters (12 AH-1 and 6 UH-1 aircraft) and related training and logistics activities. The construction and associated realignment of Beale Drive, in addition to the relocation of an atmospheric sensor, occurred within the 100-year floodplain and directly next to, but not within, wetlands. The area of new construction for the hangar (40,375 square feet) and parking areas (83 spaces) was approximately 4 acres. Construction of the new hangar facility and associated parking was determined to result in neither significant positive nor significant negative effects on floodplains, floodplain characteristics, or wetlands. The facility renovation, construction, and operation of the Marine Corps units and facilities were determined to result in insignificant direct impacts and cumulative impacts on the environment. Based on the evaluation, construction would produce temporary, insignificant adverse impacts on the physical environment, air quality, solid waste and toxic materials, and transportation, and a beneficial effect on the economy. Operations of the Marine Corps units were found to have insignificant adverse effects on water supply, air quality, waste management, noise, and transportation, with beneficial effects on safety and the economy. Analysis of potential environmental effects from this action resulted in a FONSI on the natural or human environment.

- **Clear Zone (CZ) Improvements (current):** This project involves improvements to the CZ and Graded Clear Zone (GCZ) on the south end of the runway at RAFB. These improvements are currently underway. The GCZ measures approximately 1,000 feet long by 2,000 feet wide and encompasses a designated wetland area (Wetland 25), drainages for stormwater runoff from the RAFB industrial area, and portions of a groundwater treatment system within former Landfill 02. The wetland and former landfill areas provide habitat for birds and other wildlife species. The CZ, measuring 3,000 feet long by 3,000 feet wide, encompasses wooded areas and wetlands that also provide wildlife habitat. The improvements within the CZ and GCZ have resulted in filling approximately 19.5 acres of wetlands, including approximately 2 acres within the 100-year floodplain, to provide level topography that can be maintained in turf grass next to the runway, and rerouting existing stormwater drainage through the area. The project location is determined by the proximity of the runway and the dimensions of the CZ and GCZ, and

there is no practicable alternative to construction within the 100-year floodplain and filling adjacent wetlands. Construction will permanently alter topography to meet Unified Facilities Criterion 3-260-01 (*Airport and Heliport Planning and Design*) for the CZ, and cause temporary and insignificant impacts on surface water, floodplain, wetlands, stormwater, geology and soils, air quality, the noise environment, the biological environment, safety, and transportation. Operation after the proposed action will cause only insignificant adverse effects on air quality from minor vehicle emissions during airfield turf maintenance, and the wildlife displaced by the small area of wildlife habitat lost from filling the wetlands will be easily accommodated by the extensive natural areas next to the proposed Project Site. Wetland credits purchased from a wetland mitigation bank will compensate for the unavoidable loss of wetlands. There will be no addition of impermeable land surface or personnel associated with the improvements. The Proposed Action will have short-term beneficial impacts on the socioeconomic environment from construction expenditures, and improve airfield safety by reducing the potential adverse effects from an aircraft mishap during departure or landing and the risk of bird/wildlife strikes on the airfield. Analysis of potential environmental effects from this Proposed Action resulted in a FONSI/FONPA on the natural or human environment.

- **Construction and Operation of Waste-to-Energy (WTE) Plant (current/future)**: This Proposed Action involves the construction and operation of a plasma gasification WTE plant on RAFB that would employ plasma arc furnace technology and would process much of the non-recyclable, non-hazardous waste at RAFB. The operation of this facility would greatly reduce the amount of waste from RAFB that is entering landfills. Temporary, insignificant adverse affects from construction, and insignificant effects from operations, would be minor due to employment of BMPs. The Proposed Action would not contribute to air emissions to a significant degree. Process cooling water would be recycled wastewater. The quantity and quality of wastewater from this Proposed Action would not significantly impact wastewater treatment operations. Noise generated from the Proposed Action would be typical of that already begin generated in the central industrial portion of RAFB. The Proposed Action would produce a short-term positive effect on the regional economy from the purchase of goods and services. There would be long-term benefits from the additional of personnel and the reduction/elimination of costs associated with current waste disposal practices. Analysis of potential environmental effects from the Proposed Action resulted in a FONSI on the natural or human environment.

- **Clear Zone (CZ) and Accident Potential Zone (APZ) Selective Tree Removal (future)**: This project would occur within the CZ and APZs north and south of the runway at RAFB. The overall area is undeveloped wetland and floodplain areas associated with Echeconnee Creek, Horse Creek, and the Ocmulgee River floodplain complex. The Proposed Action consists of selective tree cuts on RAFB property and

removal of timber by a timber contractor. As a conservative measure, trees that penetrate the imaginary glide slope or extend closer than 15 feet below the elevation of the imaginary surface would be cut. This represents an area approximately 20 acres in the northern CZ, 52 acres in the southern CZ, and 148 acres in the southern APZ. Implementation of the Proposed Action would have no adverse effects on topography, stormwater, groundwater, water supply, or waste or toxic materials. There would be insignificant adverse effects on surface waters, floodplains, wetlands and associated soils, air quality, biological resources, cultural resources, and noise. There would be short-term, minor beneficial effects on socioeconomics, a potential long-term beneficial effect from the change in forest composition and structure that would benefit wildlife that depend on forest openings, and a beneficial effect on airfield safety. The Proposed Action is located mainly within the 100-year floodplain, and the area contains wetlands. Floodplain and flood zone characteristics would not change, and there would be no effect on the function of surface water conveyance or flood storage capacity. No debris would be left in the floodplain. Soil disturbance would be reduced by leaving stumps in place. Wildlife would be temporality affected by construction noise; however, wildlife are accustomed to the significant aircraft noise that dominates the Proposed Action area. Displaced wildlife would relocate to unaffected areas of the adjacent bottomland hardwood swamp. Analysis of potential environmental effects from the Proposed Action resulted in a FONSI/FONPA on the natural or human environment.

The following is a discussion of the potential cumulative impacts that may result from past, current, and future actions:

The current and future projects listed above would involve only temporary construction traffic during implementation and would not involve travel to the proposed G-RAMP facilities that may be accessed by RAFB and contractor personnel. Potential direct and cumulative effects from construction and operation of these projects have been addressed through environmental reviews, and would be addressed through existing permit requirements and by permit modifications as necessary.

The demolition and construction activities associated with the projects listed above have increased or would increase the area of impermeable surface and temporarily increase air emissions, noise, and volume of solid waste and toxic materials generated. The 116 ACW MSG and Marine Corps projects have already been constructed, and temporary effects associated with the demolition and construction of facilities have already occurred. The CZ Improvements project is currently underway, and construction-related impacts from the CZ improvements are unlikely to occur at the same time as the Proposed Action, thereby further reducing the potential for temporary, cumulative adverse effects. Operations associated with the above-listed projects would not significantly increase air pollutant emissions.

The effects of noise generation from construction activities and implementation associated with the projects would be considered temporary and insignificant. Noise would not have a cumulative adverse effect on the environment. The facilities are in the elevated noise environment of the flight line, and long-term combined operations of these facilities would not increase the noise levels significantly.

Cumulative increases in the generation of solid waste have or would occur from construction activities. Materials have been or would be recycled where feasible, and waste generation would not be significant compared to the solid waste generation for RAFB. Solid waste generated by the above-listed projects would represent a minimal cumulative contribution relative to the solid waste generated by RAFB. The WTE Plant project would represent a beneficial effect by greatly reducing the amount of waste from RAFB that is entering landfills. Further, the cumulative increase in office-type solid waste generation would be minor relative to the existing RAFB population and insignificant considering the population in the Warner Robins MSA and the number of personnel currently at RAFB. Houston County has committed to providing solid waste disposal services to RAFB. This landfill is a permitted municipal solid waste landfill with 8 years of useful life remaining, and a permitted construction and demolition landfill with 35 years of useful life remaining (GA EPD 2009), and could acquire approximately 50 years of additional capacity through expansion of if needed (URS 2009b).

Cumulative increases in the generation of toxic materials may have occurred from the demolition activities in the project areas. Surveys for ACM or LBP would have been performed on the structures before demolition. Identified toxic materials would have been removed and disposed of in accordance with applicable regulations.

Cumulative increases in stormwater runoff due to increased impermeable surface area were determined to be insignificant. There would be a net increase in impermeable surface area from the Proposed Action. Site-specific design features have been or would be employed at each project site listed above to limit the volume and rate of stormwater runoff so that the effect from the cumulative volume of runoff would be insignificant. The construction contractor would be required to implement practices under individual approved ESPCPs, as applicable to each project requirement, to control stormwater runoff so that adverse effects on stormwater and surface water quality would be insignificant. Because of these control measures, the resulting cumulative effects on stormwater volume and quality and surface water quality would be insignificant.

There would be no cumulative effects on potable water use because the Proposed Action would not share potable water with RAFB but instead use water supplied by the City.

There would be no significant cumulative increase in sanitary wastewater generation from the Proposed Action and other projects, based on the City's Ocmulgee River Water Pollution Control Facility No.1 capacity of 3 MGD and the current operating average volume of approximately 1.2 to 1.5 MGD.

Cumulative effects from the loss of flood water storage capacity in the Ocmulgee River floodplain from the Proposed Action and other projects would not be significant because the placing of fill would result in no significant impact on the overall conveyance of stormwater, and the remaining floodplain contains sufficient storage capacity for the displaced flood waters.

Cumulative effects from wetland loss or a net change in wetland area are not anticipated. Potential direct and cumulative effects on wetlands resulting from the above-listed projects have been addressed through separate environmental reviews, and would be addressed through existing permit requirements and compensatory mitigation as necessary. The Proposed Action is not anticipated to result in impacts to wetlands. Impacts that may result to wetlands next to the Project Site would be offset in the region by compensatory mitigation. As necessary, the City would compensate for the wetland loss by the purchase of credits from a wetland mitigation bank. The loss of wetland habitat locally would have limited to no effect on wildlife, stormwater, or surface water resources because of the vast acreage of bottomland hardwood swamp and other wetlands located on RAFB and throughout the adjoining Ocmulgee River floodplain, primarily east of the Project Site.

The projects as a whole have produced or would produce small positive effects within the region of economic influence during the construction of the facilities. The cumulative effect of these projects would result in significant economic benefits to the local economy.

The Proposed Action, in combination with the other projects listed above, would not produce a significant adverse or positive cumulative effect on the remaining environmental resources because the Proposed Action would not make a significant contribution to potential effects, and the other listed projects were not identified as significantly impacting these resources. Therefore, a significant cumulative effect would not occur from the implementation of the Proposed Action.

5.0 Conclusions

With implementation of the design, construction, operation, and management actions or mitigation measures identified in the EA (summarized in Table ES-1), no significant adverse environmental impacts are anticipated for the Proposed Action. A FONSI/FONPA is recommended, and an EIS is not required. Table 5-1 below identifies the required permits and plans for implementing the Preferred Alternative and for supporting the FONSI/FONPA.

Table 5-1 Summary of Permits for Proposed Action

Resource Area	Permits Requirements under Proposed Action
Topography	• Land Disturbing Activity Permit - Houston County • NPDES Permit GAR100001 (approval to discharge stormwater associated with construction activity); Notice of Intent • Erosion, Sediment, and Pollution Control Plan
Surface Waters	N/A
Floodplain and Wetlands	• CWA Section 404/401 Permits - Nationwide Permit or Individual Permit from USACE • Analysis under EO 11988, *Floodplain Management* • Letter of Map Revision from City to FEMA
Stormwater	• NPDES Permit GAR100001 (approval to discharge stormwater associated with construction activity); Notice of Intent
Geology and Soils	N/A
Groundwater	N/A
Water Supply and Drinking Water	N/A
Air Quality	If PTE emissions of $PM_{2.5}$, PM_{10}, SO_2, CO, NO_x, or VOC exceed 100 tons per year or if total HAPs exceed 25 tons per year, or an individual HAP PTE exceeds 10 tons per year, a major source Title V operating permit must be obtained.
Wastewater	N/A
Solid Waste	N/A
Hazardous Materials and Waste	A storage permit is not required for storage of hazardous waste under 90 days.
Toxic Materials	N/A
Noise Environment	Noise permit from the City engineer required if construction within City limits occurs between the hours of 6:00 p.m. and 7:00 a.m.
Biological Environment	N/A
Cultural Resources	N/A
Socioeconomic Environment	N/A
Transportation	N/A
Safety	N/A

6.0 List of Preparers

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Bob Sargent, 78 CEG/CEAN

Heidi Schwingle, 78 CEG/CEANQ

Gary Lee, Executive Director, Redevelopment Agency, City of Warner Robins

Charles Beauchea, PE, Assistant City Engineer, City of Warner Robins

Laura Mathis, Middle Georgia Regional Commission

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APPENDIX A

FACILITIES REQUIREMENTS FOR MILITARY AIRCRAFT

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS WARNER ROBINS AIR LOGISTICS CENTER (AFMC)
ROBINS AIR FORCE BASE GEORGIA

18 July 2008

WR-ALC/CC
215 Page Road, Suite 269
Robins Air Force Base, Georgia 31098-1662

Mayor Donald Walker
City of Warner Robins
700 Watson Boulevard
Warner Robins, Georgia 31099

Dear Mayor Walker and Council

As you know, Warner Robins Air Logistics Center (WR-ALC) has projected an ongoing C-130 aircraft sustainment workload over the next 20 years that exceeds our organic capabilities. We fully support the concept of establishing privately-developed facilities known as "G-RAMP" on the land that the City of Warner Robins owns adjacent to the northeast boundary of Robins Air Force Base. It is our intent to pursue, to the extent permitted by law, a joint-use agreement with the City of Warner Robins allowing us to conduct C-130 or other sustainment work, including technical training, at this facility through our organic personnel resources, or by contract employees, or both. It should be understood that as a condition precedent to locating Air Force personnel and assets at these facilities, the project will be required to comply with Federal and State environmental requirements. In addition, the project will also require compliance with Federal and Air Force requirements pertaining to flight line, ramp, and taxiways, and a number of Air Force requirements regarding security, safety, processes, space and equipment specifications that will be the responsibility of the facilities owner. We will, of course, coordinate with our employees' union prior to locating any Air Force civilian employees in these facilities.

We look forward to reviewing your proposal in response to our concept of a joint-use aircraft sustainment facility. I have attached a description narrative specifying the physical characteristics of the facilities that our regulations and standards require. Please review these and let me know what other information you will require to begin the response process. I would specifically ask that you provide a single page overall site plan that graphically depicts the facility that you believe would be the basis of your offer.

For planning purposes, the duration of the facilities use agreement that we contemplate at this time is a term of 10 years, beginning on or about 1 November 2009. If we occupy the facilities pursuant to a lease, the lease agreement will have to comply with law and regulations applicable to Air Force real property leases. Once we receive your response, we will coordinate with the appropriate staff personnel and then engage in more formal discussions. In your response, please provide a proposed rental rate for the completed facility. Please also advise of any qualifications and clarifications that you need us to provide.

This letter is not an offer to lease the described facility, nor does it commit the Air Force to a specific course of action or constitute an obligation to expend any funds. Rather, it is intended to continue our dialogue with the City of Warner Robins relative to the concept of work supporting the WR-ALC mission possibly occupying this proposed facility.

We appreciate the continued support that the City of Warner Robins provides to Robins Air Force Base and we look forward to the possibility of collaborating with you in connection with this proposed facility. Our point of contact is Ms. Kim Herren, WR-ALC/XP, (478) 926-0254.

Sincerely

THOMAS J. OWEN
Major General, USAF
Commander

Attachments:
1. Facility Requirements
2. Potential Facility Sketch

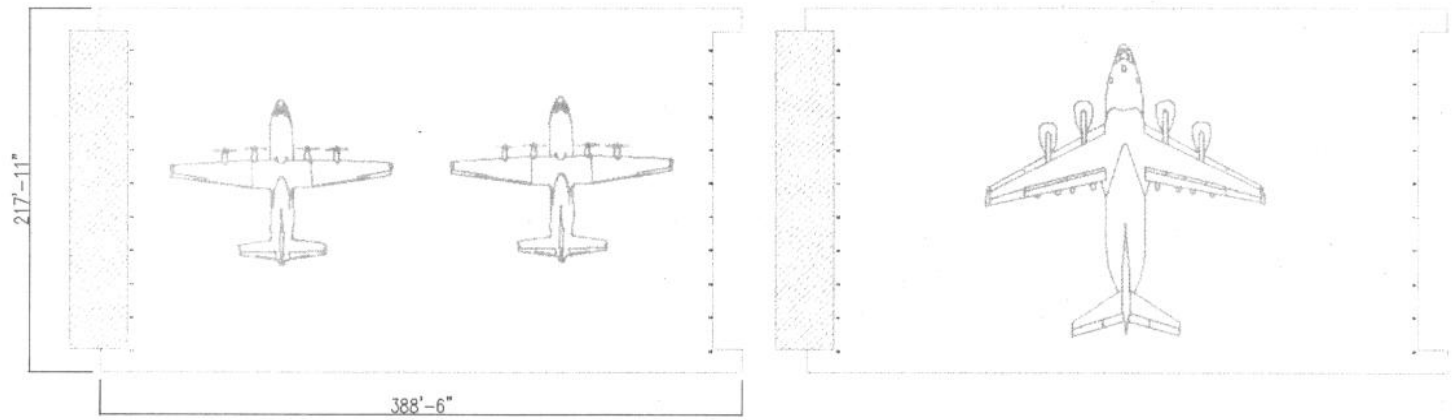
cc:
WR-ALC/XP
330 ASW/CC
402 MXW/CC
78 ABW/CC

FACILITY REQUIREMENTS

Disclaimer: This list of facility requirements is not be considered all inclusive, but provides a general description and overview of what is required to accomplish C-130 maintenance work with a future capability for C-17 maintenance work.

Basic facility requirements to accommodate four C-130 sized aircraft or two C-17 sized aircraft (see attached sketch).
Nominal hangar dimensions: 388'-6" x 217'-11"
Hangar height: maintain minimum clearance above aircraft (appx 65' height)
Door opening: provide access for C-17 aircraft as shown on attached sketch (appx 60' height)
Fall protection required per OSHA standard
Lighting required to minimum industry standards for hangars (placement critical to maintain clearance above aircraft)
Heat required to minimum industry standard for hangars
Mechanical room for comm., data, electrical, etc. required
PA system can be optional
Emergency power provided per code/industry standard
Personnel entrance doors per code/industry standard
Emergency eyewash per code/industry standard
Water, compressed air, and electricity (110V, 220V, and 440V) per code/industry standard
Fire protection provided per code/industry standard
Parking provided based on building occupancy
Roof capable of supporting small antennas (wireless communication antennas)
Built in overhead cranes are desired
Floor to be concrete finish and sealed
Environmental disposal provided per code
Grounding points provided per AF standard inside the hangars
Ramp space provided for 2-3 C-130 sized aircraft or two C-17 sized aircraft
Detailed layout of administrative, restroom, break room, backshops, and WSSC to be accomplished later; preferred total minimum square footage provided in attached sketch

ATCH 2



Area: 80,794 sf
(includes 6,660 sf admin, breakroom, mech rooms, bathrooms, PSC)

Admin Area

U. S. AIR FORCE

APPENDIX B

AGENCY AND TRIBAL COORDINATION AND RESPONSES

MACTEC
engineering and constructing a better tomorrow

July 27, 2010

Ms. Augustine Asbury, THPO
Alabama-Quassarte Tribal Town
P.O. Box 187
Wetumka, OK 74883

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Ms. Asbury:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

The proposed project includes the construction of an approximately 420,000 square foot aerospace industrial complex on approximately 90 acres of land owned by the City of Warner Robins adjacent to Robins AFB (Figure 1). The proposed complex will facilitate a Public-Private Partnership between the Warner Robins Air Logistics Center (WR-ALC) and private industry to share weapon system sustainment capabilities in order to improve aircraft availability and reduce costs.

In accordance with NEPA requirements, we are eliciting your comments and invite you to review the project. Please contact us by August 27, 2010 with your initial concerns and comments. An EA will be prepared and will be sent to you for comment after that date.

If you have questions or concerns, or need additional information, please contact me by writing at the letterhead address above. We would also be happy to arrange a meeting with you at your convenience to discuss this project. Please contact me by telephone at (770) 421-3400, by fax at (770) 421-3486, or by email: jljenkins@MACTEC.com.

We look forward to receiving your input on this project.

Sincerely,

Joshua L. Jenkins
Project Manager

Arthur R. Warner
Principal

Enclosure

MACTEC Engineering and Consulting, Inc.
3200 Town Point Drive, Suite 100 • Kennesaw, GA 30144 • Phone: 770.421.3400 • Fax: 770.421.3486
www.mactec.com

MACTEC

engineering and constructing a better tomorrow

July 27, 2010

Mr. Bryant Sylestine, THPO
Alabama-Quassarte Tribe of Texas
571 State Park Road
Livingston, TX 77351

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Sylestine:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

The proposed project includes the construction of an approximately 420,000 square foot aerospace industrial complex on approximately 90 acres of land owned by the City of Warner Robins adjacent to Robins AFB (Figure 1) The proposed complex will facilitate a Public-Private Partnership between the Warner Robins Air Logistics Center (WR-ALC) and private industry to share weapon system sustainment capabilities in order to improve aircraft availability and reduce costs.

In accordance with NEPA requirements, we are eliciting your comments and invite you to review the project. Please contact us by August 27, 2010 with your initial concerns and comments. An EA will be prepared and will be sent to you for comment after that date.

If you have questions or concerns, or need additional information, please contact me by writing at the letterhead address above. We would also be happy to arrange a meeting with you at your convenience to discuss this project. Please contact me by telephone at (770) 421-3400, by fax at (770) 421-3486, or by email: jljenkins@MACTEC.com.

We look forward to receiving your input on this project.

Sincerely,

Joshua L. Jenkins
Project Manager

Arthur R. Warner
Principal

Enclosure

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MACTEC
engineering and constructing a better tomorrow

July 27, 2010

Dr. Richard Allen, THPO
Cherokee Nation of Oklahoma
P.O. Box 948
Tahlequah, OK 74465

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Dr. Allen:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

The proposed project includes the construction of an approximately 420,000 square foot aerospace industrial complex on approximately 90 acres of land owned by the City of Warner Robins adjacent to Robins AFB (Figure 1). The proposed complex will facilitate a Public-Private Partnership between the Warner Robins Air Logistics Center (WR-ALC) and private industry to share weapon system sustainment capabilities in order to improve aircraft availability and reduce costs.

In accordance with NEPA requirements, we are eliciting your comments and invite you to review the project. Please contact us by August 27, 2010 with your initial concerns and comments. An EA will be prepared and will be sent to you for comment after that date.

If you have questions or concerns, or need additional information, please contact me by writing at the letterhead address above. We would also be happy to arrange a meeting with you at your convenience to discuss this project. Please contact me by telephone at (770) 421-3400, by fax at (770) 421-3486, or by email: jljenkins@MACTEC.com.

We look forward to receiving your input on this project.

Sincerely,

Joshua L. Jenkins
Project Manager

Arthur R. Warner
Principal

Enclosure

MACTEC Engineering and Consulting, Inc.
3200 Town Point Drive, Suite 100 • Kennesaw, GA 30144 • Phone: 770.421.3400 • Fax: 770.421.3486
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engineering and constructing a better tomorrow

July 27, 2010

Mr. Leland Thompson
Cultural Resources Director
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Thompson:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Mr. Russell Townsend, THPO
Eastern Band of Cherokee Indians
Qualla Boundary Reservation
P.O. Box 455
Cherokee, NC 28719

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Townsend:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Ms. Barbra Jackson
Georgia State Clearinghouse
270 Washington St. SW, 8th Floor
Atlanta, GA 30334

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Ms. Jackson:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Ms. Marsey Harjo
Kialegee Tribal Town of Oklahoma
P.O. Box 332
Wetumka, OK 74883

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Ms. Harjo:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Mr. Emman Stain
Acting Manager
Mucogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Stain:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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Project Manager

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July 27, 2010

Mr. James E. Tillman, Sr. - State Conservationist
USDA - Natural Resources Conservation Service
355 East Hancock Ave
Stop Number 200
Athens, Georgia 30601

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Tillman:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Mr. Robert Thrower, THPO
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, AL 35602

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Thrower:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Ms. Natalie Deere, THPO
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Ms. Deere:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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Project Manager

Arthur R. Warner
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July 27, 2010

Mr. Bill Steele, THPO
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Steele:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Mrs. Betsy Shirk
Environmental Review Coordinator
Historic Preservation Division
Department of Natural Resources
34 Peachtree St. NW, Suite 1600
Atlanta, GA 30303-2316

Subject: **Georgia-Robins Aerospace Maintenance Partnership (G-RAMP)**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mrs. Shirk:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Mr. Charles Coleman
Cultural Resources Director
Thlopthlocco Tribal Town
P.O. Box 188
Okemah, OK 74859

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Coleman:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Ms. Lisa Stopp, THPO
United Keetoowah Band of Cherokee Indians
P.O. Box 746
Tahlequah, OK 74464

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Ms. Stopp:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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July 27, 2010

Mr. Terry Kobs
U.S. Army Corps of Engineers
Albany Field Office
1104 North Westover Blvd., Unit 9
Albany, GA 31707

Subject: **Georgia-Robins Aerospace Maintenance Partnership**
Compliance with the National Environmental Policy Act (NEPA)

Dear Mr. Kobs:

The Redevelopment Agency of the City of Warner Robins is preparing an Environmental Assessment (EA), in accordance with Air Force regulations for NEPA compliance, to address the Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) project. The project is a proposed partnership between Robins Air Force Base (AFB) and the local community. The Redevelopment Agency of the City of Warner Robins is currently in the process of developing the scope for these rehabilitation activities.

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Flock, Elaine

From: Jenkins, Josh
Sent: Thursday, August 19, 2010 9:18 PM
To: Warner, Arthur
Cc: Bales, Nancy; Flock, Elaine
Subject: FW: G-RAMP Project

From: Bryant J. Celestine [mailto:celestine.bryant@actribe.org]
Sent: Thursday, August 19, 2010 9:08 AM
To: Jenkins, Josh
Subject: G-RAMP Project

Dear Mr. Jenkins:

On behalf of Mikko Oscola Clayton Sylestine and the Alabama-Coushatta Tribe, our appreciation is expressed on your efforts to consult us regarding the Environmental Assessment for the Georgia-Robins Aerospace Maintenance Partnership Project in Houston and Bibb Counties.

Our Tribe maintains ancestral associations within the state of Georgia despite the absence of written documentation to completely identify Tribal activities, villages, trails, or burial sites. However, it is our objective to ensure significances of Native American ancestry, especially of the Alabama-Coushatta Tribe, are administered with the utmost considerations.

Upon review of your July 27, 2010 submission, no known impacts to religious, cultural, or historical assets of the Alabama-Coushatta Tribe of Texas should occur from this proposal. Should you require further assistance, please do not hesitate to contact us.

Sincerely,

Bryant J. Celestine
Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Rd 56
Livingston, Texas 77351
936 - 563 - 1181
celestine.bryant@actribe.org

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM

34725 WEST BOUNDARY ROAD
CLEWISTON, FL 33440

PHONE: (863) 983-6549
FAX: (863) 902-1117

TRIBAL OFFICERS
CHAIRMAN
MITCHELL CYPRESS
VICE CHAIRMAN
RICHARD BOWERS JR.
SECRETARY
PRISCILLA D. SAYEN
TREASURER
MICHAEL D. TIGER

Joshua L. Jenkins, Project Manager
MATEC Engineering and Consulting, Inc.
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

THPO#: 006580

August 25, 2010

Subject: Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) EA, Houston County, Georgia

Dear Mr. Jenkins,

The Seminole Tribe of Florida Tribal Historic Preservation Office (STOF-THPO) has received MACTEC Engineering and Consulting's project notification for the aforementioned project. Due to the fact that the project area is within the geographic area considered by the Seminole Tribe of Florida to be ancestral, aboriginal, or ceded (NHPA 1966, Section b1, and 36 CFR, Section 800.2), the STOF-THPO would like to review any future cultural resource surveys prior to making any further comment. We thank you for the notification of this proposed project. Please reference *THPO-006580* in any future documentation about this project.

Sincerely,

Direct routine inquiries to:

Willard Steele,
Tribal Historic Preservation Officer
Seminole Tribe of Florida

Anne Mullins
Compliance Review Supervisor
annemullins@semtribe.com

JLP:am

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
COASTAL BRANCH, ALBANY FIELD OFFICE
1104 NORTH WESTOVER BOULEVARD, UNIT 9
ALBANY, GEORGIA 31707

REPLY TO
ATTENTION OF:

August 17, 2010

Regulatory Division
SAS-2009-00074

City of Warner Robins
Attn: Mr. Charles Beauchea, PE
Assistant City Engineer
700 Watson Blvd. - PO BOX 1488
Warner Robins, Georgia 31099

Dear Mr. Beauchea:

I refer to the recent submittal dated July 27, 2010, sent on your behalf by MACTEC Engineering and Consulting, Inc., requesting our comments concerning the proposed construction of an approximately 420,000 square foot aerospace industrial complex adjacent to Robins Air Force Base, in Warner Robins, Houston County, Georgia. This project has been assigned file number SAS-2009-00074. It is important that you refer to the assigned number in all communication concerning this matter.

Based on a review of the information provided by MACTEC, as well as the information you provided by letter dated January 9, 2009, it appears there may be waters of the United States on the project site. The US Army Corps of Engineers has been charged by Congress, under Section 404 of the Clean Water Act (33 U.S.C. 1344); with the responsibility to regulate all fill activities performed in the waters of the US. The placement of fill material in waters of the US without prior approval constitutes a violation of Section 404. To avoid any unforeseen problems, I recommend that a formal wetland delineation be submitted to our office for verification prior to performing any work on this site. By establishing Corps of Engineer's jurisdictional limits, possible problem areas within these sites may be addressed and difficulties avoided during the project development phase. Additionally, if you would like to set up a meeting for us to explain our program, policy, and procedures, you may contact us directly.

An important step in our review of an application is to determine the basic purpose of the project. A project's basic purpose acts to guide the scope of review pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act as outlined in Title 40 of the Code of Federal Regulations (40 CFR), published in the Federal Register on December 24, 1980. However, a stated project purpose cannot be made so specific that it effectively precludes all other potential project sites from consideration. At the same time, the project purpose cannot be so general that we cannot make a determination that the preferred alternative is the least environmentally damaging practicable alternative.

The 404(b)(1) guidelines are sequential and require that permit applicants: (1) avoid unnecessary impacts to waters of the US on the preferred alternative to the maximum extent practicable; (2) minimize to the maximum extent practicable the unavoidable adverse impacts to waters of the US on-site; and (3) provide a compensatory mitigation plan to replace the wetland and/or stream functions lost as a result of unavoidable adverse impacts associated with the project. The USACE can only issue a permit for the least environmentally damaging practicable alternative that meets the project's basic purpose. Therefore, the basic project purpose is a critical element in our evaluation for compliance with the 404(b) (1) Guidelines.

Please be advised that for projects impacting 1/10 of an acre or more of wetlands or open water and/or 100 linear feet or more of stream, compensatory mitigation will be required to replace any lost wetland and/or stream function. In addition, if either wetland or stream impact threshold is exceeded compensatory mitigation would be required for all impacts. The most preferable method of compensatory mitigation is the purchase of mitigation credits from a USACE-approved mitigation bank that services the project area. A complete list of USACE-approved mitigation banks in the State of Georgia can be found on our website at, http://www.sas.usace.army.mil/Banking.htm. In the event that sufficient mitigation credits are not available, mitigation may be accomplished by restoring, enhancing and/or preserving wetlands and/or streams on or near the project site. Please be advised that submission of an application with an acceptable mitigation plan does not guarantee that a permit will be issued. The application form and information on the Regulatory Program are available on our website at http://www.sas.usace.army.mil/Regulatory%201.htm.

Thank you in advance for completing our Customer Survey Form. This can be accomplished by visiting our web site at http://per2.nwp.usace.army.mil/survey.html and completing the survey on-line. We value your comments and appreciate your taking the time to complete a survey each time you interact with our office. If you have any questions, please feel free to contact me at 229-430-8567.

Sincerely,

Terry C. Kobs
Regulatory Specialist, Coastal Branch

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
COASTAL BRANCH, ALBANY FIELD OFFICE
1104 NORTH WESTOVER BOULEVARD, UNIT 9
ALBANY, GEORGIA 31707

REPLY TO
ATTENTION OF:

January 28, 2011

Regulatory Division
SAS-2010-01145

City of Warner Robins
Attention: Mr. Charles P. Beauchea, P.E
700 Watson Boulevard
Post Office Box 1489
Warner Robins, Georgia 31099

Dear Mr. Beauchea:

I refer to your November 23, 2010, letter requesting a preliminary jurisdictional determination for your site located northeast of and adjacent to Robins Air Force Base, southwest of the Ocmulgee River, in Warner Robins, Houston County, Georgia (Latitude 32.6507, Longitude -83.5876). This project has been assigned number SAS-2010-01145 and it is important that you refer to this number in all communication concerning this matter.

We have completed an expanded preliminary Jurisdictional Determination (JD) for the site pursuant to the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." I have enclosed a "JD Check Sheet" that summarizes the JD, delineation verification and appeals process.

In your submittal your consultant, MACTEC Engineering and Consulting, Inc., stated their belief that the subject tract contains two potentially jurisdictional wetlands and one potentially isolated wetland (borrow pit). Their belief that the borrow pit is isolated is based on the presence of a man-made berm that separates theses wetland areas from the Ocmulgee River and its associated wetland systems. Wetlands separated from other waters of the US by manmade structures are adjacent to those waters (33 CFR Part 328.3 c). Further, the borrow pit is located within the 100 year flood plan and appears to have originally been partially excavated from wetlands. The potentially isolated wetland is therefore, considered adjacent to the Ocmulgee River.

The wetlands/other waters on the subject property may be waters of the United States within the jurisdiction of Section 404 of the Clean Water Act (CWA) (33 United States Code 1344). The placement of dredged or fill material into any waterways and/or their adjacent wetlands or mechanized land clearing of those wetlands would require prior Department of the Army authorization pursuant to Section 404.

If you intend to sell property that is part of a project that requires Department of the Army Authorization, it may be subject to the Interstate Land Sales Full Disclosure Act. The Property Report required by Housing and Urban Development Regulation must state whether, or not a permit for the development has been applied for, issued or denied by the US Army Corps of Engineers (Part 320.3(h) of Title 33 of the Code of Federal Regulations).

This communication does not convey any property rights, either in real estate or material, or any exclusive privileges. It does not authorize any injury to property, invasion of rights, or any infringement of federal, state or local laws, or regulations. It does not obviate your requirement to obtain state or local assent required by law for the development of this property. If the information you have submitted, and on which the US Army Corps of Engineers has based its determination is later found to be in error, this decision may be revoked.

Thank you in advance for completing our Customer Survey Form. This can be accomplished by visiting our web site at http://per2.nwp.usace.army.mil/survey.html and completing the survey on-line. We value your comments and appreciate your taking the time to complete a survey each time you interact with our office. If you have any questions, please call me at 229-430-8567.

Sincerely,



Terry C. Kobs
Regulatory Specialist, Coastal Branch

Enclosures

Copy Furnished:

MACTEC Engineering and Consulting, Inc.
Attention: Arthur Warner
613A Russell Parkway
Warner Robins, Georgia 31088-6031

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, REGULATORY DIVISION
JURISDICTION/DELINEATION CHECK SHEET

REPLY TO
ATTENTION OF:

Regulatory Division

USACE FILE NUMBER: SAS-2010-01145 DATE: January 28, 2011

A. SECTION 1 - PRELIMINARY JURISDICTIONAL DETERMINATIONS

1. JURISDICTIONAL DETERMINATION (JD). A "preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the US Army Corps of Engineers (USACE). In summary, the USACE has determined the following with regard to waters present on the site:

_____ There may be navigable waters of the United States (US) within Rivers and Harbors Act (RHA) jurisdiction present.

__ __ There may be waters of the US within Clean Water Act (CWA) jurisdiction present.

2. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the USACE has made the following determinations:

__ __ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual."

_____ Drawings submitted with a Pre-Construction Notification (or other application) depict the approximate location/boundaries of all potentially jurisdictional waters on the project site. The USACE has verified the accuracy of the depicted boundaries of potentially jurisdictional waters in only the immediate vicinity of waters to be impacted. A complete jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the USACE to consider final verification of all other jurisdictional boundaries on the project site.

__ __ The drawing entitled "_____," dated _____ is an acceptable sketch of the approximate location/boundaries of all the potentially jurisdictional waters in the project area. This sketch can be used for initial real estate planning; projects with temporary impacts to waters; projects involving minor amounts of fill in waters; or work only subject to our jurisdiction pursuant to Section 10 of the Rivers and Harbors Act of 1899. A complete jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the USACE to consider final verification of all other jurisdictional boundaries on the project site.

3. APPEALS OF PRELIMINARY JURISDICTIONAL DETERMINATIONS: The preliminary JD is a "non-binding" written indication that there may be waters of the US on a parcel. Preliminary JDs are advisory in nature and may not be appealed (See 33 CFR 331.2)." If you are not in agreement with this preliminary JD, then you may request an approved jurisdictional determination for your project site or review area.

B. SECTION - EXPANDED PRELIMINARY JURISDICTIONAL DETERMINATIONS:

1. JURISDICTIONAL DETERMINATION (JD). An "expanded preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the USACE. In summary, the USACE has determined the following with regard to waters present on the site:

____ There may be navigable waters of the United States (US) within Rivers and Harbors Act (RHA) jurisdiction present.

__X__ There may be waters of the US within Clean Water Act (CWA) jurisdiction present.

2. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the USACE has made the following determinations:

__X__ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual."

__X__ The Global Positioning System (GPS) delineation entitled "Georgia-Robins Aerospace Maintenance Partnership Investigation Area and Potential Jurisdictional Waters", dated August 11, 2010, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on this delineation to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS AS SHOWN IN USACE FILE NUMBER SAS-2010-01145. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION."** This delineation will remain valid for a period of 5 years unless new information warrants revision prior to that date.

_____ The survey entitled "_____", dated _____, and signed by Registered Land Surveyor _____, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS AS SHOWN IN USACE FILE NUMBER SAS-2010-01145.**

OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION." This delineation will remain valid for a period of 5-years unless new information warrants revision prior to that date.

3. APPEALS OF PRELIMINARY JURISDICTIONAL DETERMINATIONS: The expanded preliminary JD is a "non-binding" written indication that there may be waters of the US on a parcel. Expanded Preliminary JDs are advisory in nature and may not be appealed (See 33 CFR. 331.2)." If you are not in agreement with this expanded Preliminary JD, then you may request an approved jurisdictional determination for your project site or review area.

C. SECTION 3 - APPROVED DETERMINATIONS: As defined in Regulatory Guidance Letter 08-02, an approved JD is an official Savannah District determination that jurisdictional "waters of the United States" or "navigable waters of the United States," or both, are either present or absent on a particular site. An approved JD precisely identifies the limits of those waters on the project site determined to be jurisdictional under the Clean Water Act (CWA) and/or the Rivers and Harbors Act (RHA).

1. JURISDICTIONAL DETERMINATION (JD). An "approved JD" form was completed for the site pursuant to the June 5, 2007, "US Army Corps of Engineers (USACE) JD Form Instructional Guidebook." The form details whether streams, wetlands and/or other waters present on the site are subject to the jurisdiction of the USACE. In summary, the USACE has determined the following with regard to waters present on the site:

_____ There are navigable waters of the (US) within (RHA) jurisdiction present.

_____ There are waters of the US within (CWA) jurisdiction present.

_____ There are non-jurisdictional waters of the US located in the project area.

_____ There are no jurisdictional waters of the US located in the project area.

2. APPROVED DETERMINATION - ISOLATED, NON-JURISDICTIONAL WATERS. If Appendix E of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the USACE verify the presence of isolated, non-jurisdictional waters located at the project site or within the review area. The completed Appendix E form is available at https://sasweb.sas.usace.army.mil/JD/, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This isolated, non-jurisdictional determination will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the USACE has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual."

Notification of Administrative Appeal Options and Process (NAP) Fact Sheet and Request for Appeal (RFA) Form.

If you request to appeal this/these determination(s) you must submit a completed RFA form to the South Atlantic Division Office at the following address:

US Army Corps of Engineers, South Atlantic Division
Attention: CESAD-PDS-O, Administrative Appeal Review Officer
60 Forsyth Street, Room 10M15
Atlanta, Georgia 30303-8801

In order for a RFA to be accepted by the USACE, the USACE must determine that it is complete, that it meets the criteria for appeal under 33 CFR, part 331.5, and that it has been received by the Division Office within 60 days of the date of this form. It is not necessary to submit an RFA form to the Division Office if you do not object to this jurisdictional determination.

D. SECTION 4 - APPLIES TO ALL OF THE ABOVE.

- US DEPARTMENT OF AGRICULTURE (USDA) PROGRAM PARTICIPANTS. This delineation/determination has been conducted to identify the limits of USACE CWA jurisdiction for this site. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Attachments:

_____ Verified Survey of Jurisdictional Streams, Wetlands and/or Other Waters

__X_ Verified GPS Delineation of Jurisdictional Streams, Wetlands and/or Other Waters

_____ Drawing of Approximate Location of Streams, Wetlands and/or Other Waters

_____ Approved Jurisdictional Determination Form(s)

__X_ Notification of Appeal Process Fact Sheet /Request for Appeal Form

Terry C. Kobs
Regulatory Specialist, Coastal Branch

1-28-2011
DATE

_____ There are isolated non-jurisdictional waters present that are not subject to CWA jurisdiction. Specifically, wetland(s) [letter of wetlands here], as identified on the exhibit entitled "_____" is/are isolated, non-jurisdictional wetlands. Department of the Army authorization, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), is not required for dredge and/or fill activities in these areas.

3. APPROVED DETERMINATION. (other than isolated, non-jurisdictional waters): If Appendix B of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the USACE verify the presence of jurisdictional waters located at the project site or within the review area. The completed Appendix B form is available at https://sasweb.sas.usace.army.mil/JD/, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This jurisdictional determination will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the USACE has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual."

_____ The Global Positioning System (GPS) delineation entitled "_____", dated _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on this delineation to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS AS SHOWN IN USACE FILE NUMBER SAS-2010-01145. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved jurisdictional determination will remain valid for a period of 5-years unless new information warrants revision prior to that date.

_____ The survey entitled "_____", dated _____, and signed by Registered Land Surveyor _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS AS SHOWN IN USACE FILE NUMBER SAS-2010-01145. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved jurisdictional determination will remain valid for a period of 5-years unless new information warrants revision prior to that date.

4. APPEALS FOR APPROVED JURISDICTIONAL DETERMINATIONS: You may request an administrative appeal for any approved geographic jurisdictional determination under USACE regulations at 33 Code of Federal Regulation (CFR) Part 331. Enclosed you will find a

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: City of Warner Robins	File Number: SAS-2010-01145	Date: January 28, 2011
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. The division engineer must receive this form within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:	
If you have questions regarding this decision and/or the appeal process you may contact: Terry Kobs US Army Corps of Engineers, Savannah District Coastal Branch, Albany Field Office 1104 North Westover Boulevard, Unit 9 Albany, Georgia 31707 229-430-8567	If you only have questions regarding the appeal process you may also contact: Administrative Appeal Review Officer CESAD-PDS-O US Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
355 East Hancock Avenue
Athens, GA 30601

August 18, 2010

Joshua Jenkins
MACTEC Engineering & Consulting, Inc.
3200 Town Point Dr., Suite 100
Kennesaw, GA 30144

Re: Early Coordination Request for Georgia-Robins Aerospace Maintenance Partnership

Dear Mr. Jenkins:

This letter is in reference to your request for information on the possible impacts the proposed aerospace industrial complex project may have on land use, conservation, water quality and other general environmental concerns that may be of interest to our agency. The following outlines our concerns with the proposed project with regards to farmland protection, and Natural Resources Conservation Service (NRCS) watershed dams and project easements.

Farmland Protection

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land uses, but not water or urban built-up land. It should be noted that the FPPA does not authorize the federal Government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

NRCS uses a Land Evaluation and Site Assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. It is our understanding that the proposed project involves federal funds or assistance, and thus could be subject to this assessment. Please note, FPPA considers indirect as well as direct conversion. The acres directly converted will be the project area. Areas planned for direct or indirect conversion should be indicated on plans or maps included in the packet of materials for the project. You will need to complete form USDA AD-1006 for your project. Please visit: http://www.nrcs.usda.gov/programs/fppa/pdf_files/AD_1026_Instruct.pdf for instructions for completion of the AD-1006 form. Additionally, contact Sherry Carlson, NRCS, in Tifton for

assistance if needed at (706) 546-2013. The completed form should be sent to Sherry at USDA-NRCS Tifton Field Office, 1468 Carpenter Road South, Tifton, GA 31793 or sherry.carlson@ga.usda.gov.

NRCS Watershed Dams

More than 50 years ago, the U.S. Department of Agriculture was authorized by Congress to help local communities with flood control and watershed protection through the Watershed Program (PL-534 Flood Control Act of 1944 and PL-566 Watershed Protection and Flood Prevention Act). As a result, local communities, with NRCS assistance, have constructed over 11,000 dams in 47 states since 1948. These dams were originally constructed for protection of farmlands from flooding impacts. In 2000, PL-566 was amended to provide NRCS authorization to assist communities with rehabilitation of their aging dams. The legislation authorizes NRCS to work with local communities and watershed project sponsors to address public health and safety concerns and potential environmental impacts of aging dams.

We have reviewed our records and have determined that there are no NRCS Watershed dams downstream or in the vicinity of this project.

NRCS Easements

NRCS easements relate to our Wetland Reserve Program and the Farm and Ranch Land Protection Program. We have reviewed our records and have determined that there are no such easements within the vicinity of the proposed project that would be impacted.

NRCS appreciates this opportunity to comment. If you have questions or need any additional information, please contact Dan Wallace of my staff at (706) 546-2278.

Sincerely,

Dorothy A. Hanis Acting

JAMES E. TILLMAN, SR.
State Conservationist

cc: Natasha Brown, Assistant State Conservationist (FO), NRCS, Americus, GA
Calvin Essex, District Conservationist, NRCS, Perry, GA
Sherry Carlson, Resource Soil Scientist, NRCS, Tifton, GA
Dan Wallace, State Resource Inventory Coordinator, NRCS, Athens, GA

Georgia Department of Natural Resources

Chris Clark, Commissioner

Historic Preservation Division

W. Ray Luce, Division Director and Deputy State Historic Preservation Officer
34 Peachtree Street, NW, Suite 1600, Atlanta, Georgia 30303-2316
Telephone (404) 656-2840 Fax (404) 657-1040 http://www.gashpo.org

July 24, 2009

Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

RE: Robins AFB: G-Ramp, Extend Taxiway & Construct Hangars, Perimeter Road
Houston County, Georgia
GA-090708-013

Dear Ms. Jackson:

The Historic Preservation Division (HPD) has reviewed the information provided regarding the above-referenced project. Our comments are offered to assist the Economic Development Administration (EDA) and its applicants in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Based on the provided information, HPD finds that no archaeological resources that are listed in or eligible for listing in the National Register of Historic Places (NRHP) will be affected by the proposed undertaking, as defined in 36 CFR Part 800.4(d)(1). HPD finds that the historic cemetery located in the project's area of potential effects (APE) may be eligible for listing in the NRHP. However, since the cemetery will be avoided and a 20-foot buffer will be maintained surrounding the cemetery, HPD finds that the proposed project will have **no adverse effect** on the potentially eligible cemetery, as defined in 36 CFR Part 800.5(d)(1).

Please refer to project number **GA-090708-013** in any future correspondence regarding this undertaking. If we may be of further assistance, please do not hesitate to contact Jackie Tyson, Environmental Review Historian, at (404) 651-6777, or Elizabeth Shirk, Environmental Review Coordinator, at (404) 651-6624.

Sincerely,

Karen Anderson-Cordova

Karen Anderson-Córdova
Manager, Planning and Local Assistance Unit

KAC: jht

cc: Asa Williams, EDA
Kristina Harpst, Middle Georgia Regional Commission

RECEIVED
JUL 28 2009
GEORGIA
STATE CLEARINGHOUSE

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

CHRIS CLARK
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

August 12, 2010

Joshua L. Jenkins
Project Manager
MACTEC Engineering and Consulting, Inc.
3200 Town Point Drive, Suite 100
Kennesaw, Georgia 30144
jljenkins@MACTEC.com

RE: Build Aerospace Complex, Robins AFB (G-RAMP), Warner Robins
Houston County, Georgia
HP-100811-009

Dear Mr. Jenkins:

The Historic Preservation Division (HPD) has received initial information concerning the above referenced project. Our comments are offered to assist the US Department of the Air Force, Robins Air Force Base, and the City of Warner Robins in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Thank you for notifying us of this proposed project. We look forward to receiving Section 106 compliance documentation from you when it becomes available. **Please note that HPD's address has changed, as indicated below.**

Please refer to project number **HP-100811-009** in future correspondence regarding this project. If we may be of further assistance, please do not hesitate to contact me at (404) 651-6624.

Sincerely,

Elizabeth Shirk

Elizabeth Shirk
Environmental Review Coordinator

ES: mn

cc: Kristi Harpst, Middle Georgia RC

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

June 1, 2011

Charles Beauchea, P.E.
City of Warner Robins
700 Watson Boulevard
Warner Robins, Georgia 31093

RE: Build Aerospace Complex (G-RAMP), Robins Air Force Base, Warner Robins
Houston County, Georgia
HP-100811-009

Dear Mr. Beauchea:

The Historic Preservation Division (HPD) has reviewed the report *Phase II National Register Assessment of Site 9HT10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) Facility, Warner Robins, Georgia,* dated April 12, 2011 and prepared by Cultural Resource Analysts, Inc. Our comments are offered to assist the United States Department of the Air Force and Robins Air Force Base in complying with the provisions of Section 106 and Section 110 of the National Historic Preservation Act (NHPA).

Based on the information contained in the report, HPD concurs that archaeological site 9HT10 is not eligible for listing in the National Register of Historic Places (NRHP). Please submit one electronic copy of the report to HPD. Please ensure the electronic copy is an optical character enabled .pdf. For your information, the electronic file will be sent to the Georgia Archaeological Site File at the University of Georgia, Athens for permanent curation.

Please refer to project number **HP-100811-009** in any future correspondence concerning this project. If we may be of further assistance, please do not hesitate to contact Bob Entorf, Review Archaeologist, at (404) 651-6775, or me at (404) 651-6624.

Sincerely,

Elizabeth Shirk

Elizabeth Shirk
Environmental Review Coordinator

ES:ebp

cc: Kristina Harpst, Middle Georgia Regional Commission

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

June 20, 2011

Charles Beauchea, PE
City of Warner Robbins Asst. City Engineer
700 Watson Boulevard
Warner Robins, Georgia 31093

RE: Build Aerospace Complex (G-RAMP), Robins Air Force Base, Warner Robins
Houston County, Georgia
HP-100811-009

Dear Mr. Beauchea:

The Historic Preservation Division (HPD) has received the electronic copy of the report *Phase II National Register Assessment of Site 9HT10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) Facility, Warner Robins, Georgia* which we had recently requested.

Thank you for providing HPD with the electronic copy. For your information, the electronic copy will be sent to the Georgia Archaeological Site Files at the University of Georgia-Athens for permanent retention.

Please refer to project number **HP-100811-009** in any future correspondence on this project. If we may be of further assistance, please do not hesitate to contact me, at (404) 651-6624.

Sincerely,

Elizabeth Shirk
Environmental Review Coordinator

ES:kac

cc: Kristina Harpst, Middle Georgia Regional Commission

DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Mr. Leland Thompson
Cultural Resources Director
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Mr. Thompson,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia also mentions archaeological site 9Ht126. This site was investigated by archaeologists in 1996 and was recommended to be ineligible for the NRHP because only nine pieces of chert debitage were recovered. The report detailing the findings of this investigation, *Archaeological Survey of the Upland Portions of a Proposed Base Expansion Area, Robins Air Force Base, Houston County, Georgia,* is also copied on the CD mentioned above. Site 9Ht126 was briefly revisited during the phase II evaluation of site 9Ht10 and three additional pieces of debitage were found. This site has produced a total of twelve artifacts, and, importantly, lacks diagnostic material and integrity. As a result, Robins Air Force Base continues to concur with the findings of *Archaeological Survey of the Upland Portions of a Proposed Base Expansion Area, Robins Air Force Base, Houston County, Georgia*, and, accordingly, also does not recommend 9Ht126 to be eligible for the NRHP.

I have designated the Robins Air Force Base Civil Engineer, Mr. Otis L. Hicks, Jr., as the Robins Air Force Base liaison for correspondence with you to foster communications between you and Robins Air Force Base; he can be reached at (478) 926-3093. Once you have had an opportunity to review the report, please send comments you have concerning these documents or any other issues to him at: 78 CEG/CL, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-1664. Additionally, if your staff wishes to correspond directly with the Robins Air Force Base Cultural Resources staff, please contact Ms. Andrea Pyron at (478) 327-7438 or at 78 CEG/CEANR, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-2201.

MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

1 Attachment:
1. CD containing the reports: *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia* and *Archaeological Survey of the Upland Portions of a Proposed Base Expansion Area, Robins Air Force Base, Houston County, Georgia*

DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Mr. Emman Stain
Acting Manager
Muscogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Mr. Emman,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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I have designated the Robins Air Force Base Civil Engineer, Mr. Otis L. Hicks, Jr., as the Robins Air Force Base liaison for correspondence with you to foster communications between you and Robins Air Force Base; he can be reached at (478) 926-3093. Once you have had an opportunity to review the report, please send comments you have concerning these documents or any other issues to him at: 78 CEG/CL, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-1664. Additionally, if your staff wishes to correspond directly with the Robins Air Force Base Cultural Resources staff, please contact Ms. Andrea Pyron at (478) 327-7438 or at 78 CEG/CEANR, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-2201.

MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Dr. Richard Allen
Tribal Historic Preservation Officer
Cherokee Nation of Oklahoma
P.O. Box 948
Tahlequah, OK 74465

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Dr. Allen,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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I have designated the Robins Air Force Base Civil Engineer, Mr. Otis L. Hicks, Jr., as the Robins Air Force Base liaison for correspondence with you to foster communications between you and Robins Air Force Base; he can be reached at (478) 926-3093. Once you have had an opportunity to review the report, please send comments you have concerning these documents or any other issues to him at: 78 CEG/CL, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-1664. Additionally, if your staff wishes to correspond directly with the Robins Air Force Base Cultural Resources staff, please contact Ms. Andrea Pyron at (478) 327-7438 or at 78 CEG/CEANR, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-2201.

MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Ms. Augustine Asbury
Tribal Historic Preservation Officer
Alabama-Quassarte Tribal Town
P.O. Box 187
Wetumka, OK 74883

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Ms. Asbury,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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I have designated the Robins Air Force Base Civil Engineer, Mr. Otis L. Hicks, Jr., as the Robins Air Force Base liaison for correspondence with you to foster communications between you and Robins Air Force Base; he can be reached at (478) 926-3093. Once you have had an opportunity to review the report, please send comments you have concerning these documents or any other issues to him at: 78 CEG/CL, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-1664. Additionally, if your staff wishes to correspond directly with the Robins Air Force Base Cultural Resources staff, please contact Ms. Andrea Pyron at (478) 327-7438 or at 78 CEG/CEANR, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-2201.

MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Mr. Bryant Celestine
Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Rd 56
Livingston, TX 77351

RE: Georgia-Robins Aerospace Maintenance Partnership (G-RAMP) EA, Houston County, Georgia

Mr. Celestine,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Mr. Willard Steele
Tribal Historic Preservation Officer
Seminole Tribe of Florida
34725 West Boundary Road
Clewiston, FL 33440

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Mr. Steele

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Ms. Lisa Stopp
Tribal Historic Preservation Officer
United Keetoowah Band of Cherokee Indians
P.O. Box 746
Tahlequah, OK 74464

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Ms. Stopp,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Ms. Marsey Harjo
Tribal Historic Preservation Officer
Kialegee Tribal Town of Oklahoma
P.O. Box 332
Wetumka, OK 74883

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Ms. Harjo,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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I have designated the Robins Air Force Base Civil Engineer, Mr. Otis L. Hicks, Jr., as the Robins Air Force Base liaison for correspondence with you to foster communications between you and Robins Air Force Base; he can be reached at (478) 926-3093. Once you have had an opportunity to review the report, please send comments you have concerning these documents or any other issues to him at: 78 CEG/CL, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-1664. Additionally, if your staff wishes to correspond directly with the Robins Air Force Base Cultural Resources staff, please contact Ms. Andrea Pyron at (478) 327-7438 or at 78 CEG/CEANR, 775 Macon St., Bldg 1555, Robins AFB, GA, 31098-2201.

MITCHEL H BUTIKOFER, Colonel, USAF
Installation Commander

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

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620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Charles Coleman
Cultural Resources Director
Thlopthlocco Tribal Town
P.O. Box 188
Okemah, OK 74859

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Mr. Coleman,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Mr. Robert Thrower
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, AL 35602

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Mr. Thrower,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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78TH AIR BASE WING (AFMC)
ROBINS AIR FORCE BASE GEORGIA

APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Mr. Russell Townsend
Tribal Historic Preservation Officer
Eastern Band of Cherokee Indians
P.O. Box 455
Cherokee, NC 28719

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Mr. Townsend,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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DEPARTMENT OF THE AIR FORCE
78TH AIR BASE WING (AFMC)
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APR 0 6 2012

78 ABW/CC
620 9th Street, Suite 230
Robins AFB, GA 31098-1664

Ms. Natalie Deere
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

RE: Georgia-Robins Aerospace Maintenance Partnership (GRAMP) EA, Houston County, Georgia

Ms. Deere,

I am writing to send you the results of recent Phase II testing of a small site located near Robins Air Force Base, GA. The archaeological site 9Ht10 received Phase II testing by MACTEC Engineering and Consulting (MACTEC) in consonance with the letter MACTEC sent you on 27 July 2010. The report of the Phase II testing, entitled *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* indicated a low density of artifacts discovered, a lack of identifiable tools, a lack of vertical integrity, and a paucity of diagnostic materials. Resultantly, the MACTEC archaeological staff determined that these findings do not support a recommendation for eligibility for the National Register of Historic Places (NRHP). Upon review, Robins Air Force Base concurs with the findings of the report, and, accordingly, also does not recommend 9Ht10 to be eligible for the NRHP. A copy of MACTEC's report, *Phase II National Register Assessment of Site 9Ht10 at the Proposed Georgia-Robins Aerospace Maintenance Partnership (GRAMP) Facility, Warner Robins, Georgia,* is enclosed on a CD.

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GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

August 1, 2012

Fred Hursey, Chief
Environmental Restoration & Conservation Section
Environmental Branch
Department of the Air Force
Robins Air Force Base
78 CEG/CEANR
775 Macon St., Bldg. 1555
Robins AFB, Georgia 31098
Attn: Andrea Pyron

RE: CDBG/One GA: Robins AFB: G-Ramp, Extend Taxiway & Const Hangars, Perimeter Rd.
Houston County, Georgia
GA-090708-013

Dear Mr. Hursey:

The Historic Preservation Division (HPD) has reviewed the information submitted concerning the above referenced project. Our comments are offered to assist the U.S. Department of the Air Force and Robins Air Force Base (AFB) in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

The subject project consists of G-RAMP, extend taxiway and construct hangars on Perimeter Road at Robins Air Force Base. Previously, HPD found no archaeological resources listed or eligible for listing in the National Register of Historic Places (NRHP) would be affected by the proposed undertaking. Additionally, since the cemetery would be avoided and a 20-foot buffer maintained surrounding the cemetery, HPD found that the proposed project would have no adverse effect on the potentially eligible cemetery, as stated in a letter dated July 24, 2009.

Based on the additional information provided in *The Delineation of the Minshew-Thomas-Sullivan Cemetery (9HT128), G-Ramp Robins AFB and the City of Warner Robins, Houston County, Georgia* report and the Department of the Air Force cover letter dated June 29, 2012, HPD concurs with the recommendation that the one acre cemetery boundary accurately delineates the known cemetery interments. However, HPD recommends an additional 50-foot buffer on the east side of the cemetery plot be protected from ground-disturbing activities in order to protect additional unmarked graves and to include two additional plated cemetery boundaries. In the event future work requiring ground surface disturbance is proposed for this area, it is our opinion that a ground penetrating radar (GPR) survey to detect additional unmarked graves would be warranted. HPD also recommends that the trash and debris piled within the northern portion of the cemetery be carefully removed and grassed to bring the cemetery back to a natural setting.

Please submit one electronic copy of *The Delineation of the Minshew-Thomas-Sullivan Cemetery (9HT128), G-Ramp Robins AFB and the City of Warner Robins, Houston County, Georgia* report to HPD. Please ensure the electronic copy is an optical character recognition enabled .pdf. For your information, the electronic copy will be sent to the Georgia Archaeological Site File at the University of Georgia-Athens for permanent retention.

Please refer to project number **GA-090708-013** in any future correspondence on this project. If we may be of further assistance, please do not hesitate to contact Elizabeth Shirk, Environmental Review Coordinator, at (404) 651-6624.

Sincerely,

Karen Anderson-Cordova
Program Manager
Environmental Review and Preservation Planning

KAC:jad

cc: Keith Dyche, EDA
Chan Layson, Middle Georgia Regional Commission
Kristi Harpst, Middle Georgia Regional Commission

APPENDIX C

MINIMUM STANDARDS

FROM GEORGIA STORMWATER MANAGEMENT MANUAL

SECTION

1.2

STORMWATER MANAGEMENT STANDARDS

1.2.1 Overview

This section presents a comprehensive set of minimum performance standards for stormwater management for development activities in the state of Georgia. The overall aim is to provide an integrated approach to address both the water quality and quantity problems associated with stormwater runoff due to urban development.

The goal of a set of minimum stormwater management standards for areas of new development and significant redevelopment is to reduce the impact of post-construction stormwater runoff on the watershed. This can be achieved by (1) maximizing the use of site design and nonstructural methods to reduce the generation of runoff and pollutants; (2) managing and treating stormwater runoff though the use of structural stormwater controls; and (3) implementing pollution prevention practices to limit potential stormwater contaminants.

It should be noted that the standards presented here are recommended for all communities in Georgia. They may be adopted by local jurisdictions as stormwater management development requirements and/or may be modified to meet local or watershed-specific stormwater management goals and objectives. Please consult your local review authority for more information.

The minimum standards for development are designed to assist local governments in complying with regulatory and programmatic requirements for various state and Federal programs including the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit program and the National Flood Insurance Program under FEMA.

1.2.2 Minimum Standards for Development

1.2.2.1 Applicability

The stormwater management standards for new development and redevelopment are intended to apply to any development site that meets one or more of the following criteria:

(1) New development that includes the creation or addition of 5,000 square feet or greater of new impervious surface area, or that involves land disturbing activity of 5,000 square feet of land or greater.
(2) Redevelopment that includes the creation or addition of 5,000 square feet or greater of new impervious surface area, or that involves land disturbing activity of 1 acre or more.
(3) Any commercial or industrial new development or redevelopment, regardless of size, with a Standard Industrial Classification (SIC) code that falls under the NPDES Industrial Stormwater Permit program, or a hotspot land use as defined below.

In addition, redevelopment sites that involve land disturbing activity of 5,000 square feet or greater, but less than 1 acre, must meet Minimum Standard 8 (to meet state and NPDES construction erosion and sediment control requirements) and should meet Minimum Standards 2, 9 and 10 to the maximum extent practicable.

Definitions

New development is defined as land disturbing activities, structural development (construction, installation or expansion of a building or other structure), and/or creation of impervious surfaces on a previously undeveloped site.

Redevelopment is defined as structural development (construction, installation or expansion of a building or other structure), creation or addition of impervious surfaces, replacement of impervious surface not part of routine maintenance, and land disturbing activities associated with structural or impervious development. Redevelopment does not include such activities as exterior remodeling.

A hotspot is defined as a land use or activity on a site that produces higher concentrations of trace metals, hydrocarbons or other priority pollutants than are normally found in urban stormwater runoff. Examples of hotspots include gas stations, vehicle service and maintenance areas, salvage yards, material storage sites, garbage transfer facilities, and commercial parking lots with high-intensity use.

Exemptions

The following development activities are suggested to be exempted from the minimum stormwater management standards:

(1) Developments that do not disturb more than 5,000 square feet of land;
(2) Individual single family residential lots. (Single family lots that are part of a subdivision or phased development project should not be exempt from the minimum standards); and
(3) Additions or modifications to existing single-family structures.

Additional Requirements

New development or redevelopment in critical or sensitive areas, or as identified through a watershed study or plan, may be subject to additional performance and/or regulatory criteria. Furthermore, these sites may need to utilize or restrict certain structural controls in order to protect a special resource or address certain water quality or drainage problems identified for a drainage area.

1.2.2.2 Minimum Stormwater Management Standards

The following standards are the recommended minimum stormwater management performance requirements for new development or redevelopment sites falling under the applicability criteria in subsection 1.2.2.1. (The word “shall” in brackets is provided for local jurisdictions that wish to adopt these standards as part of their stormwater management ordinances) A more detailed explanation of each minimum standard is provided in the next subsection.

- Minimum Standard #1 – Use of Better Site Design Practices for Stormwater Management

 Site designs should preserve the natural drainage and treatment systems and reduce the generation of additional stormwater runoff and pollutants to the fullest extent practicable.

- Minimum Standard #2 – Stormwater Runoff Quality

 All stormwater runoff generated from a site should [shall] be adequately treated before discharge. Stormwater management systems (which can include both structural stormwater controls and better site design practices) should [must] be designed to remove 80% of the average annual post-development total suspended solids (TSS) load and be able to meet any other additional watershed- or site-specific water quality requirements.

 It is presumed that a stormwater management system complies with this performance standard if:

- It is sized to capture and treat the prescribed water quality treatment volume, which is defined as the runoff volume resulting from the first 1.2 inches of rainfall from a site; and
- Appropriate structural stormwater controls are selected, designed, constructed, and maintained according to the specific criteria in this Manual.
- Runoff from hotspot land uses and activities is adequately treated and addressed through the use of appropriate structural stormwater controls and pollution prevention practices.

⑨ Minimum Standard #3 – Stream Channel Protection

Stream channel protection should [shall] be provided by using all of the following three approaches: (1) 24-hour extended detention storage of the 1-year, 24-hour return frequency storm event; (2) erosion prevention measures such as energy dissipation and velocity control; and (3) preservation of the applicable stream buffer.

⑨ Minimum Standard #4 – Overbank Flood Protection

Downstream overbank flood protection should [shall] be provided by controlling the post-development peak discharge rate to the predevelopment rate for the 25-year, 24-hour return frequency storm event. If control of the 1-year, 24-hour storm (Minimum Standard #3) is exempted, then overbank flood protection should [shall] be provided by controlling the post-development peak discharge rate to the predevelopment rate for the 2-year through the 25-year return frequency storm events.

⑨ Minimum Standard #5 – Extreme Flood Protection

Extreme flood protection should [shall] be provided by controlling and/or safely conveying the 100-year, 24-hour return frequency storm event such that flooding is not exacerbated. Existing and future floodplain areas should be preserved as possible.

⑨ Minimum Standard #6 – Downstream Analysis

A downstream hydrologic analysis should [shall] be performed to determine if there are any additional impacts in terms of peak flow increase or downstream flooding while meeting Minimum Standards #1 through 5. This analysis should [shall] be performed at the outlet(s) of the site, and downstream at each tributary junction to the point(s) in the conveyance system where the area of the portion of the site draining into the system is less than or equal to 10% of the total drainage area above that point.

⑨ Minimum Standard #7 – Groundwater Recharge

Annual groundwater recharge rates should be maintained to the extent practicable through the use of nonstructural methods.

⑨ Minimum Standard #8 – Construction Erosion and Sedimentation Control

Erosion and sedimentation control practices shall be utilized during the construction phase or during any land disturbing activities.

⑨ Minimum Standard #9 – Stormwater Management System Operation and Maintenance

The stormwater management system, including all structural stormwater controls and conveyances, should [shall] have an operation and maintenance plan to ensure that it continues to function as designed.

⑨ Minimum Standard #10 – Pollution Prevention

To the maximum extent practicable, the development project should [shall] implement pollutant prevention practices and have a stormwater pollution prevention plan.

⑨ Minimum Standard #11 – Stormwater Management Site Plan

The development project should [shall] prepare a stormwater management site plan for local government review that addresses Minimum Standards #1 through 10.

1.2.2.3 Explanation of Minimum Standards

Use of Better Site Design Practices for Stormwater Management (Minimum Standard #1)

All site designs should implement a combination of approaches collectively known as stormwater better site design practices to the fullest extent possible. Through the use of these practices and techniques, the impacts of urbanization on the natural hydrology of the site and water quality can be significantly reduced. The goal is to reduce the amount of stormwater runoff and pollutants that are generated, provide for natural on-site control and treatment of runoff, and optimize the location of stormwater management facilities. Better site design concepts can be viewed as both water quantity and water quality management tools and can reduce the size and cost of required structural stormwater controls. Better site design practices are described in Section 1.4.

Stormwater Runoff Quality (Minimum Standard #2)

Stormwater runoff generated on the development site is to be treated by the stormwater management system to remove at least 80% of the calculated average annual post-development TSS loading from the site. This can be achieved through the use of site design practices and structural stormwater controls.

This requirement is quantified and expressed in terms of engineering design criteria through the specification of a water quality volume (WQ_v) that must be treated to the 80% TSS removal performance goal. The water quality treatment volume is equal to the runoff generated on a site from 1.2 inches of rainfall. The water quality volume is one of the unified stormwater sizing criteria, which are used in conjunction to size and design stormwater management facilities to address stormwater impacts. The unified stormwater sizing criteria and methods to calculate the WQ_v are discussed in Section 1.3.

Structural stormwater controls are sized and designed to treat the WQ_v. Depending on their removal efficiency or site constraints, more than one structural control may need to be used in parallel or in series (treatment train) to meet the water quality treatment requirement. Further, this standard assumes that structural stormwater controls will be designed, constructed and maintained according to the criteria in this Manual. Stormwater discharges from land uses or activities with higher or special potential pollutant loadings may require the use of specific structural controls and pollution prevention practices. A detailed overview of structural stormwater controls is provided in Section 3.1.

The use of nonstructural site design practices that provide water quality benefits allows for a reduction (known as a “credit”) of the water quality volume. The applicable design practices and stormwater site design credits are covered in Section 1.4.

Stream Channel Protection (Minimum Standard #3)

Protection of stream channels is to be provided to both downstream as well as on-site channels. This is accomplished through three complementary criteria:

The first method of providing streambank protection is the extended detention of the 1-year, 24-hour storm for a period of 24 hours using structural stormwater controls. It is known that the increase in runoff due to development can dramatically increase stream channel erosion. This standard is intended to reduce the frequency, magnitude and duration of post-development bankfull flow conditions. The volume to be detained is also known as the channel protection volume (Cp_v). The channel protection volume is one of the unified stormwater sizing criteria, which are used in conjunction to size and design stormwater management facilities to address stormwater impacts. The unified stormwater sizing criteria and methods to calculate the storage requirements and routing of Cp_v are discussed in Section 1.3. The use of nonstructural site design practices that reduce the total amount of runoff will also reduce Cp_v by a proportional amount. This requirement may be waived by a local jurisdiction for sites that discharge directly into piped stormwater drainage systems, larger streams, rivers, wetlands, lakes, estuaries, tidal waters, or other situations where the reduction in the smaller flows will not have an impact on streambank or channel integrity.

The second streambank protection method is to implement velocity control, energy dissipation, streambank stabilization, and erosion prevention practices and structures as necessary in the stormwater management system to prevent downstream erosion and streambank damage. Energy dissipation and velocity control methods are discussed in Section 4.5.

The third method of providing for stream channel protection is through the establishment of riparian stream buffers on the development site. Stream buffers not only provide channel protection but also water quality benefits and protection of streamside properties from flooding. It is recommended that 100-foot buffers be established where feasible. Additional stream buffer guidelines are presented in Section 1.4.

Downstream Overbank Flood Protection (Minimum Standard #4)

Overbank flood protection for downstream channels is to be provided by preventing the post-development 25-year, 24-hour storm peak discharge rate (denoted Q_{p25}) from exceeding the pre-development (or natural conditions) discharge rate using structural stormwater controls. The overbank flood protection peak rate is one of the unified stormwater sizing criteria, which are used in conjunction to size and design stormwater management facilities to address stormwater impacts. The unified stormwater sizing criteria and methods to calculate the storage requirements and routing of Q_{p25} are discussed in Section 1.3. The use of nonstructural site design practices that reduce the total amount of runoff will also reduce Q_{p25} by a proportional amount.

Smaller storm events (e.g., 2-year and 10-year) are effectively controlled through the combination of the extended detention for the 1-year, 24-hour event (channel protection criterion) and the control of the 25-year peak rate for overbank flood protection. These design standards, therefore, are intended to be used in unison.

If the control of the 1-year, 24-hour storm under Minimum Standard #3 is exempted, then for overbank flood protection, peak flow attenuation of the 2-year (Qp_2) through the 25-year (Qp_{25}) return frequency storm events must be provided.

This standard may be adjusted by a local jurisdiction for areas where all downstream conveyances and receiving waters have the natural capacity to handle the full build-out 25-year storm through a combination of channel capacity and overbank flood storage without causing flood damage.

Extreme Flood Protection (Minimum Standard #5)

Extreme flood protection is to be provided by controlling and/or safely conveying the 100-year, 24-hour storm event (denoted Q_f). This is accomplished either by (1) controlling Q_f through structural stormwater controls to maintain the existing 100-year floodplain, or (2) by sizing the on- site conveyance system to safely pass Q_f and allowing it to discharge into a receiving water whose protected floodplain is sufficiently sized to account for extreme flow increases without causing damage. In this case, the extreme flood protection criterion may be waived by a local jurisdiction in lieu of provision of safe and effective conveyance to receiving waters that have the capacity to handle flow increases at the 100-year level.

The extreme flood protection peak rate is one of the unified stormwater sizing criteria, which are used in conjunction to size and design stormwater management facilities to address stormwater impacts. The unified stormwater sizing criteria and methods to calculate the storage requirements and routing of Q_f are discussed in Section 1.3. The use of nonstructural site design practices that reduce the total amount of runoff will also reduce Q_f by a proportional amount.

Downstream Analysis (Minimum Standard #6)

Due to peak flow timing and runoff volume effects, some structural controls fail to reduce discharge peaks to predevelopment levels downstream from the development site.

A downstream peak flow analysis is to be provided to the point in the watershed downstream of the site or the stormwater management system where the area of the site comprises 10% of the total drainage area. This is to help ensure that there are minimal downstream impacts from the developed site.

The downstream analysis may result in the need to resize structural stormwater controls, or may allow the waiving of some unnecessary peak flow controls altogether. The use of a downstream analysis and the "ten-percent" rule are discussed in Section 2.1.

Groundwater Recharge (Minimum Standard #7)

Recharge to groundwater should be implemented to the extent practicable through the use of nonstructural better site design techniques that allow for recharge of stormwater runoff into the soil. The annual recharge from the post-development site should approximate the annual recharge from the pre-development or existing site conditions, based on soil types. Stormwater runoff from a hotspot site or land use should not be infiltrated without effective pretreatment.

The recommended stormwater runoff volume to be recharged to groundwater should be determined using the existing site (pre-development) soil conditions. The recommended rates of recharge for various hydrologic soil groups are as follows:

Hydrologic Group	Volume to Recharge (x Total Impervious Area)
A	0.40 inches of runoff
B	0.25 inches of runoff
C	0.10 inches of runoff
D	n/a

More information on site design practices that promote infiltration is found in Section 1.4.

Construction Erosion and Sedimentation Control (Minimum Standard #8)

All new development and redevelopment sites must meet the regulatory requirements for land disturbance activities under the Georgia Erosion and Sedimentation Control Act and/or the NPDES General Permit for Construction Activities. This involves the preparation and implementation of an approved erosion and sedimentation control plan, including appropriate best management practices, during the construction phase of development. Further guidance on practices for construction site erosion and sedimentation control can be found in the Manual for Erosion and Sediment Control in Georgia.

Better site design practices and techniques that can reduce the total amount of area that needs to be cleared and graded should be implemented wherever possible. It is essential that erosion and sedimentation control be considered and implemented in stormwater concept plans and throughout the construction phase to prevent damage to natural stormwater drainage systems and previously constructed structural stormwater controls and conveyance facilities.

Stormwater Management System Operation and Maintenance (Minimum Standard #9)

All new development and redevelopment sites are to prepare a comprehensive operation and maintenance plan for the on-site stormwater management system. This is to include all of the stormwater management system components, including drainage facilities, structural stormwater controls, and conveyance systems. To ensure that stormwater management systems function as they were designed and constructed, the operation and maintenance plan must provide: (1) a clear assignment of stormwater inspection and maintenance responsibilities; (2) the routine and non-routine maintenance tasks to be undertaken; (3) a schedule for inspection and maintenance; and (4) any necessary legally binding maintenance agreements.

Pollution Prevention (Minimum Standard #10)

All new development and redevelopment sites are to consider pollution prevention in the design and operation of the site, and prepare a formal stormwater pollution prevention plan. Specific land use types and hotspots may need to implement more rigorous pollution prevention practices. The preparation of pollution prevention plans and the full set of pollution prevention practices are covered in Volume 3 of this Manual.

Stormwater Management Site Plan (Minimum Standard #11)

All new development and redevelopment sites are to develop a stormwater management site plan. The stormwater site plan is to provide details, including a narrative and technical information and analysis, that indicates how the proposed development meets Minimum Standards #1 through 10 (or the applicable local stormwater regulatory requirements). The preparation of stormwater management site plans is covered in Section 1.5.

APPENDIX D

DOD POLICY MEMORANDUM OUTLINING REQUIREMENTS UNDER EISA

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

JAN 19 2010

MEMORANDUM FOR ACTING ASSISTANT SECRETARY OF THE ARMY
(INSTALLATIONS AND ENVIRONMENT)
ACTING ASSISTANT SECRETARY OF THE NAVY
(INSTALLATIONS AND ENVIRONMENT)
ACTING ASSISTANT SECRETARY OF THE AIR
FORCE (INSTALLATIONS, LOGISTICS, AND
ENVIRONMENT)

SUBJECT: DoD Implementation of Storm Water Requirements under Section 438 of the Energy Independence and Security Act (EISA)

Reducing the impacts of storm water runoff associated with new construction helps to sustain our water resources. In October 2004, DoD issued Unified Facilities Criteria on Low Impact Development (LID) (UFC 3-210-10), a storm water management strategy designed to maintain the hydrologic functions of a site and mitigate the adverse impacts of storm water runoff from DoD construction projects. Using LID techniques on DoD facility projects can also assist in fulfilling environmental regulatory requirements under the Clean Water Act. Since 2004, DoD has implemented LID techniques for controlling storm water runoff on a number of projects.

EISA Section 438 (Title 42, US Code, Section 17094) establishes into law new storm water design requirements for Federal development and redevelopment projects. Under these requirements, Federal facility projects over 5,000 square feet must "maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow." Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (October 5, 2009), directed the U.S. Environmental Protection Agency (EPA) to issue EISA Section 438 guidance. DoD shall implement EISA Section 438 and the EPA *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*, using LID techniques in accordance with the policy outlined in the attachment.

EISA Section 438 requirements are independent of storm water requirements under the Clean Water Act and should not be included in permits for storm water unless a State (or EPA) has promulgated regulations for certain EISA Section 438

requirements (i.e., temperature/heat criteria) that are applicable to all regulated entities under its Clean Water Act authority.

The attached policy will be incorporated into applicable DoD Unified Facilities Criteria within six months. My points of contact are Thadd Buzan at (703) 571-9079 and Ed Miller at (703) 604-1765.

Dorothy Robyn
Deputy Under Secretary of Defense
(Installations and Environment)

Attachment:
As stated

DoD Policy on Implementing Section 438 of the Energy Independence and Security Act (EISA)

1. EISA Section 438 requirements apply to projects that construct facilities with a footprint greater than 5,000 gross square feet, or expand the footprint of existing facilities by more than 5,000 gross square feet. The project footprint consists of all horizontal hard surfaces and disturbed areas associated with the project development, including both building area and pavements (such as roads, parking, and sidewalks). These requirements do not apply to internal renovations, maintenance, or resurfacing of existing pavements.

2. The overall design objective for each project is to maintain predevelopment hydrology and prevent any net increase in storm water runoff. DoD defines "predevelopment hydrology" as the pre-project hydrologic conditions of temperature, rate, volume, and duration of storm water flow from the project site. The analysis of the predevelopment hydrology must include site-specific factors (such as soil type, ground cover, and ground slope) and use modeling or other recognized tools to establish the design objective for the water volume to be managed from the project site.

3. Project site design options shall be evaluated to achieve the design objective to the maximum extent technically feasible. The "maximum extent technically feasible" criterion requires full employment of accepted and reasonable storm water retention and reuse technologies (e.g., bio-retention areas, permeable pavements, cisterns/recycling, and green roofs), subject to site and applicable regulatory constraints (e.g., site size, soil types, vegetation, demand for recycled water, existing structural limitations, state or local prohibitions on water collection). All site-specific technical constraints that limit the full attainment of the design objective shall be documented. If the design objective cannot be met within the project footprint, LID measures may be applied at nearby locations on DoD property (e.g., downstream from the project) within available resources.

4. Prior to finalizing the design for a redevelopment project, DoD Components shall also consider whether natural hydrological conditions of the property can be restored, to the extent practical.

5. Estimated design and construction costs for implementing EISA Section 438 shall be documented in the project cost estimate as a separate line item. Final implementation costs will be documented as part of the project historical file. Post-construction analysis shall also be conducted to validate the effectiveness of as-built storm water features.

The following flowchart illustrates the DoD implementation process for EISA Section 438, consistent with the U.S. Environmental Protection Agency's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* (December 2009) (http://www.epa.gov/owow/nps/lid/section438/.

Flowchart for EISA §438 Implementation

1. Determine applicability

Requirement: apply to all Federal projects with a footprint greater than 5,000 square feet

2. Establish design objective

Requirement: maintain or restore predevelopment hydrology

OPTIONS

1
Total volume of rainfall from 95th percentile storm is to be managed on-site.

2
Determine predevelopment hydrology based on site-specific conditions and local meteorology by using continuous simulation modeling techniques, published data, studies, or other established tools. Determine water volume to be managed onsite.

Design water volume
(to be retained)

3. Evaluate design options

Design water volume
(to be retained)

Requirement: meet design objective to maximum extent technically feasible (METF)

TYPICAL ON-SITE DESIGN OPTIONS

- **Bio-retention areas**
- **Permeable pavements**
- **Cisterns / recycling**
- **Green roofs**

Use any combination of on-site options to achieve the design objective to the METF. Document site-specific constraints.

TECHNICAL CONSTRAINT EXAMPLES

- Retaining storm water on site would adversely impact receiving water flows
- Site has shallow bedrock, contaminated soils, high groundwater, underground facilities or utilities
- Soil infiltration capacity is limited
- Site is too small to infiltrate significant volume
- Non-potable water demand (for irrigation, toilets, wash-water, etc.) is too small to warrant water harvesting and reuse systems
- Structural, plumbing, or other modifications to existing buildings to manage storm water are infeasible
- State or local requirements restrict water harvesting
- State or local requirements restrict the use of green infrastructure/LID

remaining water volume?

Selected on-site design options

OFF-SITE OPTIONS
(optional)

Selected off-site design options

4. Finalize design and estimate cost

APPENDIX E

NOTICE OF DECISION, NO FURTHER ACTION, GA EPD

Georgia Department of Natural Resources
2 Martin Luther King Jr. Drive, S.E., Suite 1154, Atlanta, Georgia 30334
Lonice C. Barrett, Commissioner
Environmental Protection Division
Harold F. Reheis, Director
404/656-2833

COPY

September 12, 2002

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Steven W. Coyle, Director
Environmental Management
WR-ALC/EM
455 Byron Street, Suite 465
Robins Air Force Base, GA 31098-1860

RE: **Notice of Decision**; Modifications to the Robins Air Force Base Hazardous Waste Facility Permit #HW-064(S); EPA ID No. GA1 570 024 330.

Dear Mr. Coyle:

The Hazardous Waste Management Branch of the Georgia Environmental Protection Division (EPD) has made final decisions:

(1) to modify the Corrective Action Plan for Landfill Nos. 1 & 2 [Solid Waste Management Units (SWMUs) 1 & 2, respectively] dated February 2001 in order to incorporate Replacement Pages 40–52 & 59–68 and a new Figure 1 for Appendix A submitted to our agency in correspondence (Coyle to Rabon) dated May 10, 2002 [Also see our correspondence (Khaleghi to Coyle) dated May 20, 2002];

(2) to approve the Corrective Action Plan for the Greater Base Industrial Area Trichloroethene Groundwater Contamination (SWMU 20) dated February 27, 2002;

(3) to approve the Corrective Action Plan for the Machine Shop at Building 140 (SWMU 40) dated March 8, 2002, as amended;

(4) to approve the Corrective Action Plan for the JP-8 Product Line along Main Controlled Taxiway and JP-8 Product Line near intersection of Taxiway No. 2 and Taxiway No. 3 (SWMUs 59 & 60, respectively) dated December 2001, as amended;

(5) to approve the Corrective Action Plan for the Third Street Storm Sewer and Outfall (SWMU 62) dated March 2001, as amended;

(6) that No Further Action is required at this time for the JP-4 Spill Site (SWMU 10A) in response to your Class 3 Permit Modification Request contained in correspondence (Coyle to Ussery) received by our agency on May 15, 2002;

(7) that No Further Action is required at this time for the Test Firing Range for M61-20mm Guns (Buildings 2041, 2042 & 2043) (SWMU 63) in response to your Class 3 Permit Modification Request contained in correspondence (Coyle to Ussery) dated January 23, 2002; and

(8) that No Further Action is required at the Plastic Shop Baghouses at Building 670 (Former Dry Cleaning Facility), Oil/Water Separator at Building 680, Chemical Storage Shed at Building 680, Building 110 – Aircraft Hangar, and Area of Concern (AOC) near Taxiway No. 4 (SWMUs 43, 51, 52 & 69 and AOC1, respectively).

Please note that Item Nos. 1-8 listed above have been incorporated into the modified Permit attached to this correspondence. Our final decisions are based upon the requirements set forth in the Georgia Hazardous Waste Management Act, as amended, O.C.G.A. §12-8-60, *et seq.*; and the Rules for Hazardous Waste Management, Chapter 391-3-11, promulgated pursuant thereto, as amended (Rules), Chapter 391-3-11, which incorporates by reference the Code of Federal Regulations found in 40 CFR Parts 124, 260-268, 270, 273 and 279.

Prior to making final decisions to incorporate these changes into the Robins Air Force Base Hazardous Waste Facility Permit #HW-064(S), the Rules require EPD to provide an opportunity for public comment. Accordingly, the forty-five (45) day public comment period began on July 28, 2002 and ended on September 10, 2002. No comments were received during this public comment period. Should you have any questions concerning this correspondence, please contact Brent Rabon of my staff at (404)656-2833.

Sincerely,

Harold F. Reheis, Director

Attachment
c: Mr. Don Webster, EPA Region IV
File: Robins(R)
R:\BRENTR\ROBINS\PERMIT\2002MOD\FINALMODLETT

APPENDIX F

EXECUTIVE SUMMARY OF PHASE II ARCHEOLOGICAL SURVEY REPORT

Contract Publication Series TN11-01

PHASE II NATIONAL REGISTER ASSESSMENT OF SITE 9HT10 AT THE PROPOSED GEORGIA-ROBINS AEROSPACE MAINTENANCE PARTNERSHIP FACILITY, WARNER ROBINS, GEORGIA

By

Paul G. Avery, RPA, and
Patrick H. Garrow, RPA

Prepared for

MACTEC Engineering and Consulting, Inc.
613A Russell Parkway
Warner Robins, Georgia 31088

Prepared by

Cultural Resource Analysts, Inc.
2908 Sevier Avenue
Knoxville, Tennessee 37920
CRA Project No.: T11M001
pgavery@crai-ky.com
(865) 249-6035



Principal Investigator
Paul G. Avery, RPA

March 30, 2011

MANAGEMENT SUMMARY

Cultural Resource Analysts, Inc. (CRA), was contracted by MACTEC Engineering and Consulting, Inc., to conduct archaeological testing at Site 9HT10 in Warner Robins, Georgia. The site is bounded on the north by the bluff above the Ocmulgee River swamp, to the west by the Warner Robins Water Pollution Control Plant #2, and on the south and east by a large sand quarry. Archaeologists with CRA conducted the archaeological fieldwork between February 9 and 17, 2011. Paul G. Avery, RPA, served as principal investigator and field director. Mr. Avery was assisted in the field by archaeological technicians Chad Caswell, Mike Curran, Dan Marcel, and Jason Ross.

Site 9HT10 was recorded in 1977 during the survey for the sewage treatment plant. The site was described as a disturbed lithic scatter and was not considered to be eligible for inclusion on the National Register of Historic Places (NRHP) at that time (Griffin 1977). The site was revisited by archaeologists from Garrow and Associates, Inc., in 1996. Shovel tests conducted at that time revealed intact buried deposits and produced two Middle to Late Archaic projectile points, along with numerous pieces of chert debitage. Further research was recommended on the site based on the artifact density and the presence of intact cultural soil deposits (Espenshade and Holland 1996).

Five 1 x 1 m test units and one 1 x 2 m test unit were excavated, which produced 1,799 artifacts. The artifact assemblage consisted primarily of chert flakes, although one Ledbetter, one Elora, and one partial Morrow Mountain I projectile point were recovered. The Elora and Morrow Mountain points were associated with a partially intact buried A-horizon that was recorded in all but one test unit. Based on this association, it is likely that the A-horizon marks the living surface during the Middle to Late Archaic period. Five small ceramic sherds recovered from the plow zone may mark a minor Woodland occupation of the site.

Based on the excavations and artifacts recovered, Site 9HT10 has been interpreted as a sporadically occupied camp site with a low density of artifacts. This interpretation is based on the lack of cultural features, lack of identifiable tools, and the high frequency of small flakes, which is indicative of tool maintenance rather than manufacture. The site was likely used as a seasonal camp during periods when resources were sought along the Ocmulgee River and in the wetlands associated with it. The site dates primarily to the Middle and Late Archaic but has a very small Woodland component.

A buried A-horizon that was likely the ground surface during the Middle and Late Archaic period occupation of the site was noted in all of the test units south of the access road. Bioturbation has caused the migration of artifacts out of this zone and into the apparently undisturbed soil beneath it. Therefore, the vertical integrity of the A-horizon has been compromised. Based on the lack of vertical integrity and the paucity of diagnostic materials, Site 9HT10 is not recommended eligible for inclusion on the NRHP. The site lacks the potential to provide important information on the past lifeways of the inhabitants. No further research is recommended prior to construction.

APPENDIX G

MINSHEW-THOMAS-SULLIVAN (WELLSTON) CEMETERY

DELINEATION REPORT

THE DELINEATION OF THE MINSHEW-THOMAS-SULLIVAN CEMETERY (9HT128), G-RAMP, ROBINS AFB AND THE CITY OF WARNER ROBINS, HOUSTON COUNTY, GEORGIA

WARNER ROBINS AIR LOGISTICS CENTER
ROBINS AFB, GEORGIA

Prepared for:
78th Civil Engineer Group, Environmental Management
Robins Air Force Base, Georgia

Prepared by:
URS Corporation
Stephen A. Hammack, RPA

June 2012

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Introduction

The Georgia Robins Aerospace Maintenance Partnership (G-RAMP) is a proposed development involving the City of Warner Robins and Robins Air Force Base (AFB) in northern Houston County, Georgia. The Executive Summary (ES) of the October 5, 2011 Draft Environmental Assessment (EA) for this project proposed the establishment of a protective fence and 20-foot buffer around a historic family cemetery (**Figure 1**) on the project area's southern boundary (AMEC 2011:50; ES-11). This buffer was deemed necessary due to uncertainty as to whether or not there might be unidentified graves around the margin of the cemetery. Three early sources referencing the cemetery posited differing numbers of graves. Howell (1982:121) reported nine marked and 11 unmarked graves in this cemetery, Maltais (Garrow and Holland 1993:8) documented seven marked and 11 unmarked graves, and Espenshade and Holland (1996) reported that the cemetery "contains 15 marked graves and at least 12 depressions that may represent unmarked graves." The latter report included a sketch map (**Figure 2)** of the cemetery, but it was not based on an archaeological delineation. In fact, no investigation of the cemetery thus far, including a more recent investigation by Cultural Resource Analysts (Avery and Garrow 2011) has delineated the cemetery's precise boundaries via standard techniques.

On 14 March 2011, Robins AFB's onsite archaeologist (hereafter "Project Archaeologist") performed a pedestrian survey of this cemetery, and in the process identified a minimum of 18 marked graves and at least 15-20 east-west depressions (i.e., probable unmarked graves). Based on this information, and with the approval and cooperation of the Engineering Department of the City of Warner Robins and Robins AFB's 78th Civil Engineer Group (78 CEG), an archaeological delineation was subsequently performed to establish the cemetery's actual physical boundaries. This delineation, conducted by the Project Archaeologist in consultation with Assistant City Engineer Charles Beauchea and the Sullivan family, was performed between February and May 2012. The goal of this study was to use accepted professional techniques to locate and map all marked and unmarked graves, thereby ensuring their protection during the development of the property.

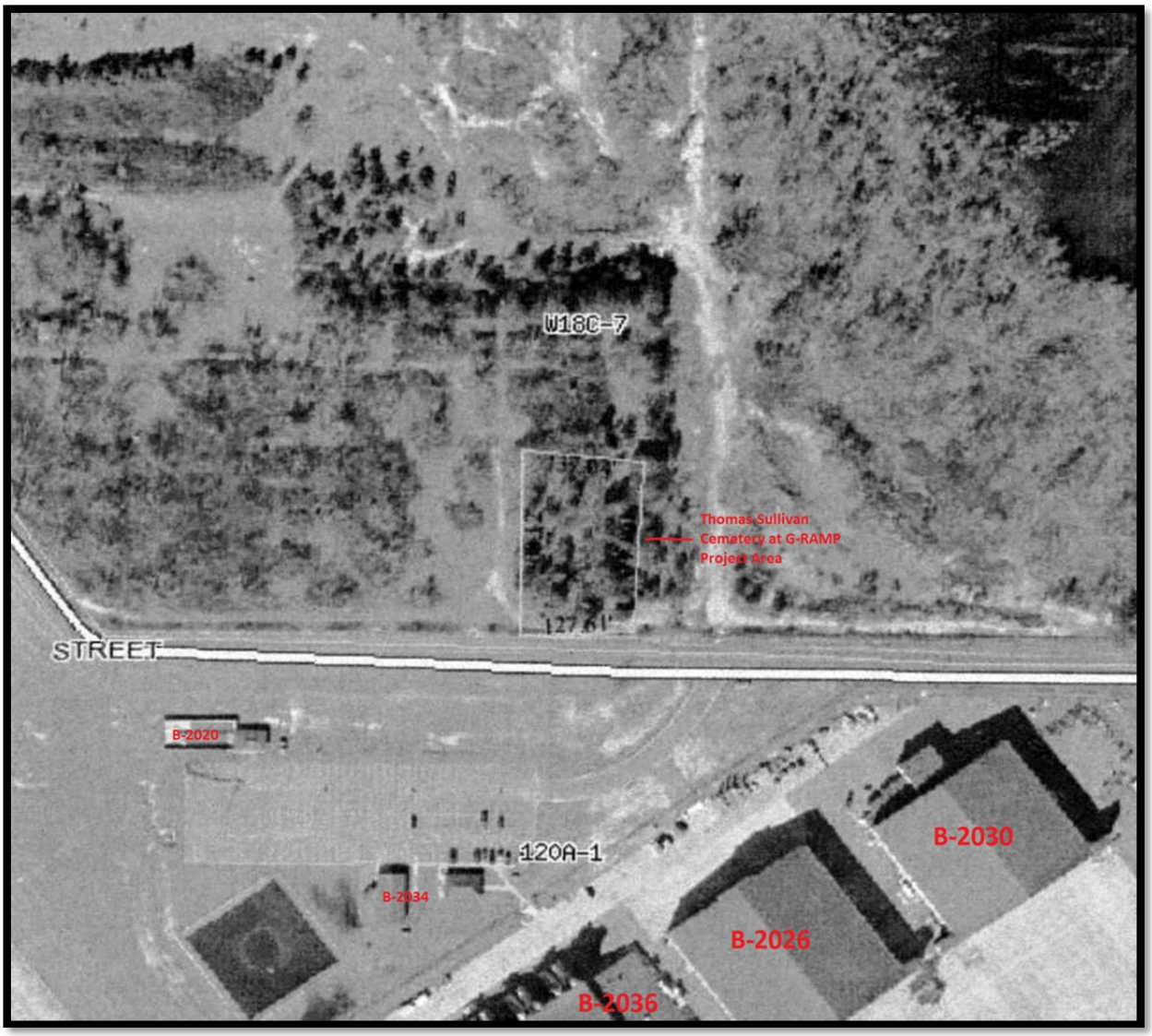


Figure 1. Annotated Aerial Photograph Depicting Minshew-Thomas-Sullivan Cemetery in Relation to Buildings at Robins AFB, Houston County Georgia (Houston County Board of Tax Assessors 2012)

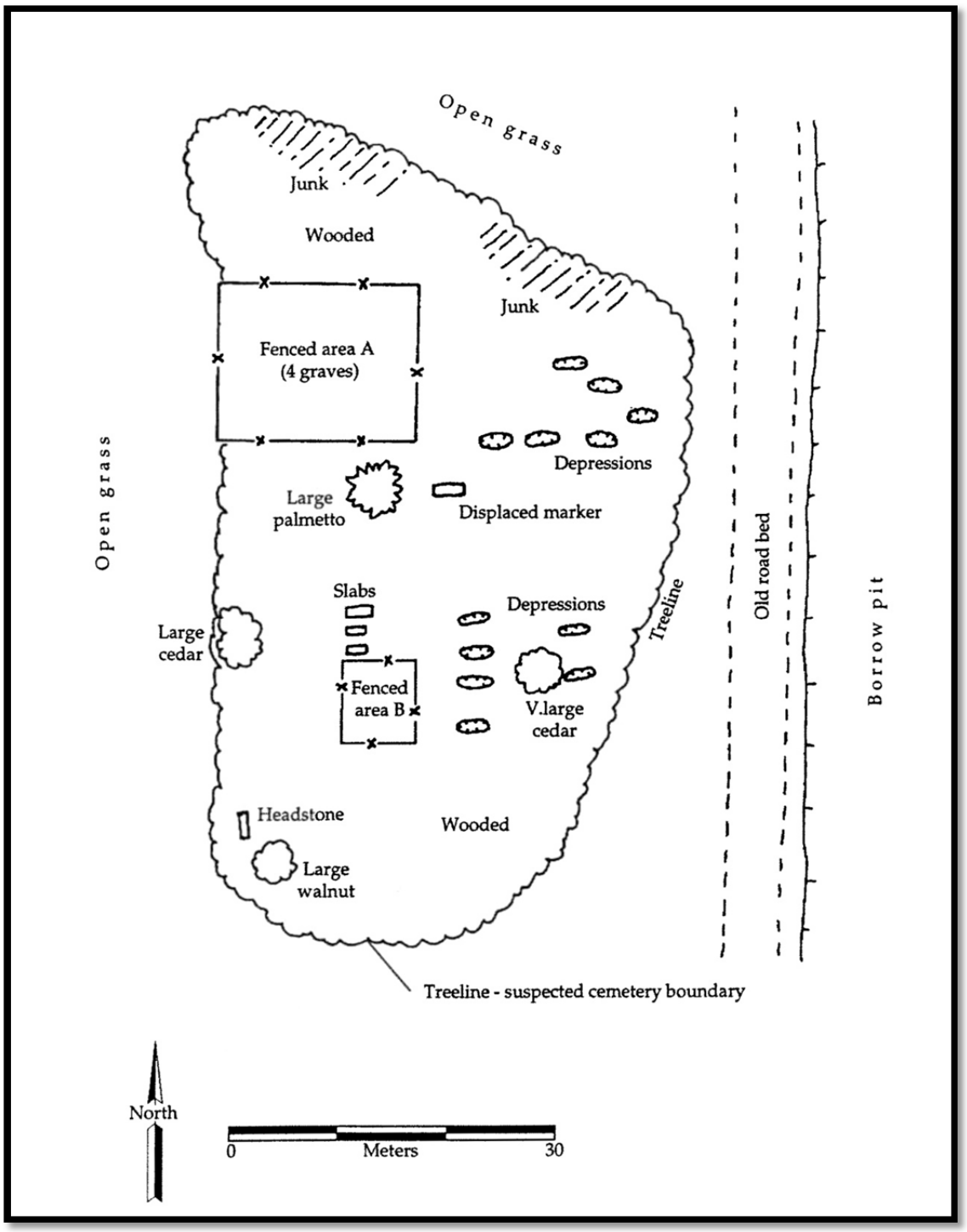


Figure 2. Minshew-Thomas-Sullivan Cemetery (9Ht128), also known as the Old Wellston Cemetery (Espenshade and Holland 1996:42)

Methodology

The Project Archaeologist consulted historical maps, county records, and oral history. A title search for deeds pertaining to the property was performed in the Record Room of the Houston County Superior Court. Various will books, estate inventory and sales books, and minute books were consulted at the Houston County Probate Court. Information was also gathered from the Sullivan family, including copies of deeds, plat maps, and other family data relating to the individuals interred in the cemetery.

A thorough pedestrian surface inspection of all exposed ground was performed to locate evidence of east-west depressions, since these can be indicators of unmarked graves. Archaeological probing was the specific methodology utilized for this project, employing a four-foot-long tile probe rod at six-inch intervals over the entire cemetery and adjacent areas. Probing is a method used by professional archaeologists on a widespread basis, and constitutes an accepted form of "ground-truthing." All potential grave locations (both marked and unmarked) were individually mapped using a survey-grade total station. Both the recording of coordinates and the creation of the map were completed by the staff of Robins AFB's 78 CEG.

Results of Historical Research

The cemetery is located in the extreme southeastern corner of Land Lot 230 in Houston County's 5th Land District. This lot was offered up to the public in Georgia's 4th Land Lottery of 1821. This system of land dispersal was unique to Georgia, and was one of seven such land lotteries in the state.

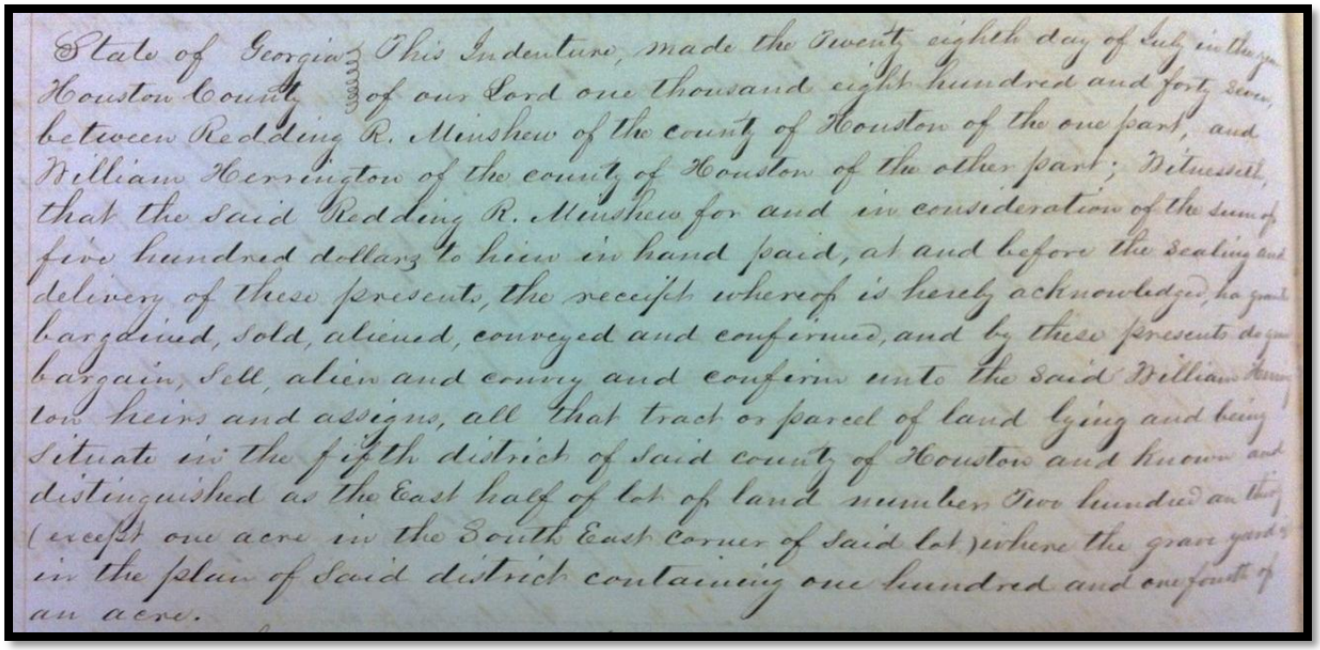
Mary Dew, a widow then living in Chatham County's Mills Militia District, acquired Houston County's Land Lot 230 in this lottery. It is not known if she ever occupied her land. It is known that John Deshazo owned the land a few years later, however, and when he sold it to Nathan Minchew (sic) on August 15, 1827, Deshazo was living in Bullock County northwest of Savannah, evidently never having settled on the land (Houston County Superior Court Deed Book C:429).

Nathan Minshew (1770-1846) was a native of North Carolina and was the son of Nathan M. and Elizabeth Bryan Minshew of Dobbs County, North Carolina. He and at least two of his brothers, along with their families, evidently moved to Twiggs County on the Georgia frontier just after the county was opened up to settlement in 1807. The names of his brothers, Jacob and Phillip "Mincey," were listed on a Georgia Militia payroll as privates who assisted in the construction of Fort Twiggs in August 1813 during the Creek War (Clark 1999:434). This fort was probably located along the River Road near the Ocmulgee River in Twiggs County, somewhere in the vicinity of Tarversville. Phillip purchased property in that part

of original Houston County that is situated north of Echeconnee Creek in an area that was later transferred to Bibb County (Clark 1999:103). As late as 1829, Nathan Minshew was still paying taxes on his Twiggs land, which encompassed Land Lot 187 (202.5 acres) in Twiggs' 25th Land District in Captain Moors' Militia District.

The Minshew family owned property in the vicinity of the cemetery from 1827 until at least 1847. In 1821, Nathan had drawn Land Lot 250 in Houston's 5th Land District when he was living in Twiggs County's Chain Militia District. Land Lot 250 was located just two land lots east and one land lot south of Land Lot 230, indicating that Nathan was attempting to increase the size of his holdings. Nathan was listed as "Head of Household" in the 1830 Census of Houston County, and had three free white males, four free white females, and two slaves living with him at the time (Central Georgia Geneaological Society 1986a:32). He served as a justice of the peace from January 1831-January 1833 (Central Georgia Geneaolgical Society 1998:56). Only a Calvin "Minchew" is listed in the 1840 Census, and no Minshews/Minchews/Minceys are listed at all in the 1850 or 1860 Censuses (Central Georgia Geneaological Society 1986b; 1986c; 1986d). However, Nathan's daughter Margaret married Merrill Thomas, and they are listed as living in close proximity to the area in the 1850 and 1860 Censuses (Central Georgia Geneaological Society 1986c:46; Central Georgia Geneaological Society 1986d:48-49). Her obituary reads as follows: "Mrs. M. E. Thomas, mother of Dr. L. J. Thomas, died on Jul. 15, 1882 after a brief illness. She was 67 years old and the daughter of Nathan Minshew. Her husband had died in Mar. 1863" (Central Georgia Geneaological Society 1998:158).

Land Lot 230 was granted by Nathan to his son Redding R. Minshew in 1846, but this was contingent upon the death of Nathan's wife Elizabeth (Houston County Probate Court Will Book A:208). Nathan died on February 24, 1846 and Elizabeth died on the 9th of November in the same year. The next year Redding began selling his father's Houston County land, including Land Lot 230, with one vital exception. The deed of sale (**see Figure 3**) for the east half of that land lot, which was sold by Redding to William Herrington, contained the words "…all that tract or parcel of land lying and being situate [situated] in the fifth district of said county of Houston and known and distinguished as the East half of lot of land number two hundred and thirty (**except one acre in the South East corner of said lot where the grave yard is**) in the plan of said district containing one hundred and one fourth of an acre" (Houston County Superior Court Deed Book J:331). It is crucial that this be understood from a property title standpoint, since this deed created "an express reservation of land for burial purposes," even though mention of the cemetery appears to have been omitted from subsequent property deeds (Van Voorhies 2003:5).



State of Georgia } This Indenture, made the Twenty eighth day of July in the yea
Houston County } of our Lord one thousand eight hundred and forty seven,
between Redding R. Minshew of the county of Houston of the one part, and
William Herrington of the county of Houston of the other part; Witnesseth,
that the said Redding R. Minshew for and in consideration of the sum of
five hundred dollars to him in hand paid, at and before the sealing and
delivery of these presents, the receipt whereof is hereby acknowledged, ha granted
bargained, sold, aliened, conveyed and confirmed, and by these presents do grant
bargain, sell, alien and convey and confirm unto the said William Herrin
ton heirs and assigns, all that tract or parcel of land lying and being
situate in the fifth district of said county of Houston and known and
distinguished as the East half of lot of land number Two hundred and thir
(except one acre in the South East corner of said lot where the grave yard
in the plan of said district containing one hundred and one fourth of
an acre.

Figure 3. 1847 Deed of Sale for Half of Land Lot 230, Except for One Acre Graveyard (Houston County Superior Court Deed Book J:331)

The title search did not locate any records pertaining to this corner of Land Lot 230 again until the year 1899. The next time the property changed hands appears to have been one-half of this land lot, along with other land, that Julia E. Vinson sold to Ben Roberson in 1899 (Houston County Superior Court Deed Book BB:501). In 1913, Ben Roberson sold 50 acres in the southeast corner of Land Lot 230 to H. B. Campbell (Houston County Superior Court Deed Book 20:516). Campbell subsequently borrowed money in 1913 from Julia H. Harper, using the property as collateral. This debt was later paid in full (Houston County Superior Court Deed Book 18:386-387). Campbell then sold the 50 acres in 1915 to John B. Haines (Houston County Superior Court Deed Book 20:516). While the cemetery is not mentioned in any of these deeds, it was located on this 50-acre parcel.

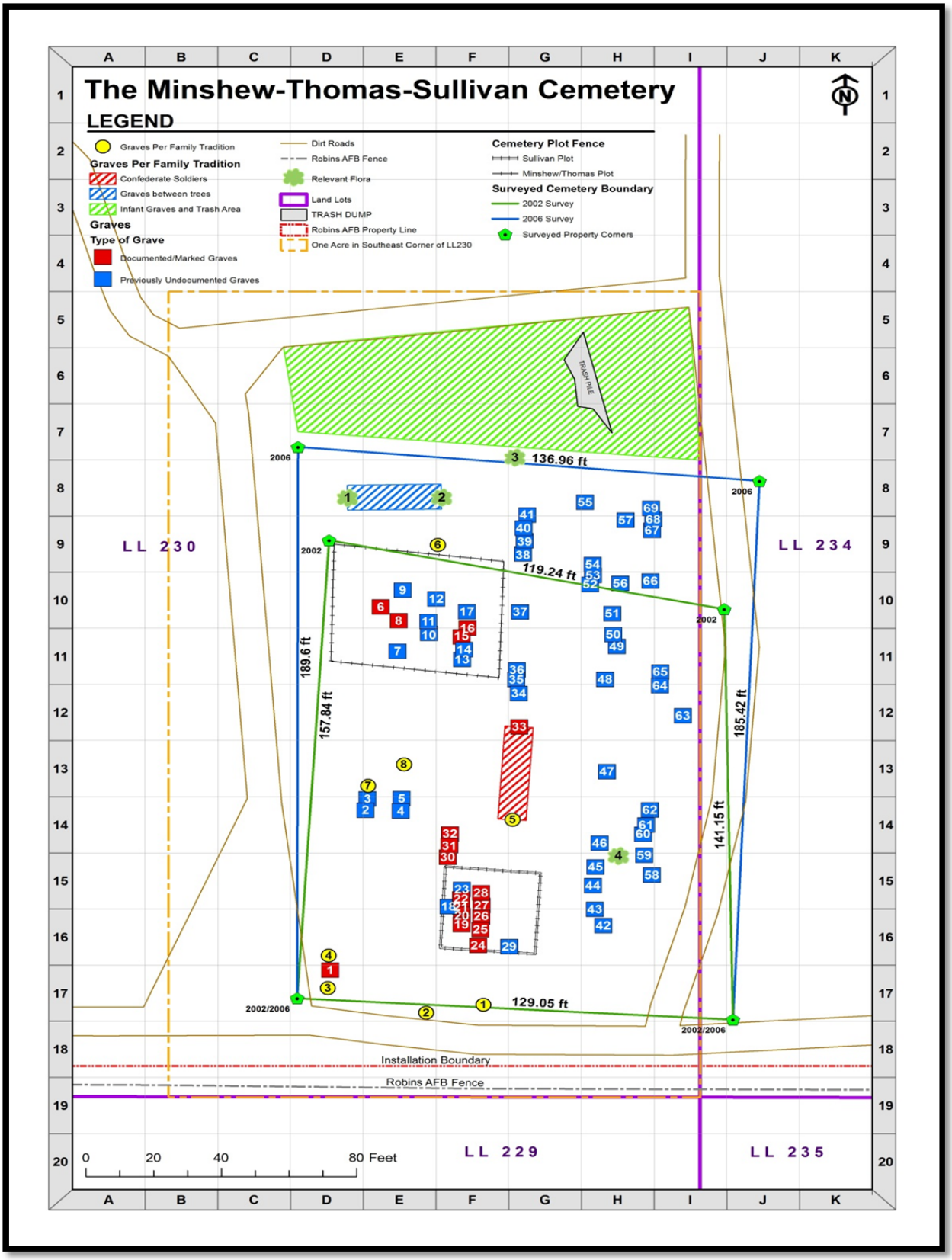
Although it is not known who owned the property between the years 1915 and 1941, the Sullivan family owned land in this area at the time and utilized the cemetery as their family graveyard for many years. In fact, Thomas Osborn Sullivan leased "the Gray Place" (an unknown location nearby) from L. J. Thomas (Nathan Minshew's grandson) in 1905, and purchased Land Lot 234, which is situated adjacent to the cemetery's eastern side, from Thomas in 1911 for $1,350 (Houston County Superior Court Deed Book 5: 571; Houston County Superior Court Deed Book 15:516). Sullivan died on November 17, 1912, and his obituary stated that "…burial was in the family cemetery about 100 yards from his home. He was 86 years old and had lived on his farm for 30 years, which is near the Ocmulgee River" (Howell 1982:283). It is not currently known if Sullivan actually owned either part or all of Land Lot 230.

While no deeds were found between 1915 and 1941, it is clear that the Sullivan family did own that part of Land Lot 230 where the cemetery is located for part or all of that time. The next deed that references this part of Land Lot 230 dates to 1941, when Mattie Lee (Sullivan) Thornton, Thomas O. Sullivan's daughter, sold the east half of the land lot and all of Land Lot 234 to Martin J. Reid for $3,200 (Houston County Superior Court Deed Book 50:555). Reid eventually acquired a total of 623.64 acres of contiguous land, including the cemetery tract, and his heirs retained the property until 1997. However, their ownership is quite difficult to understand since "undivided interests" based on percentages were awarded to four heirs in 1966 (HCSC DB 272:34-36). Furthermore, one of Reid's daughters had married a West, obtained three of the four interests, and died intestate by 1968. Although her interest was awarded to her husband, son, and daughter, the Wests (controlling a ¾ interest) and the other heir (with a ¼ interest) appear to have worked together for their common benefit, and leased the land to the Georgia Department of Natural Resources (DNR) in the late 1970s. The family finally sold the entire tract to the Georgia Department of Natural Resources in 1997, and it remained part of Oaky Woods Wildlife Management Area until deeded to the City of Warner Robins just in 2006.

A plat dated 1964 shows the property where the city would build its sewage treatment plant (Houston County Superior Court Plat Book 9:84). Although it does show the corner of the four land lots where the cemetery is, it does not show the cemetery at this location. The entire Reid property is shown on a plat dated 1970, but this plat does not depict the cemetery either (Houston County Superior Court Plat Book 15:220), and neither do the two plats granting easements through the Reid property granted to the City of Warner Robins in 1976 and to the owners of Bradley Plywood Company in 1979 (Houston County Superior Court Plat Book 18:300; Houston County Superior Court Plat Book 22:371). The first plat to actually depict the cemetery is the Georgia Department of Natural Resources (DNR) Plat of 1979, although this plat was not actually recorded until 1997 (Houston County Superior Court Plat Book 50:24). Finally, a copy of Arthur Sullivan, Sr.'s 2006 plat of the cemetery (entered for him into the records of the Superior Court), and provided by him personally, shows a slightly larger area than that shown on the 1979 plat.

Results of Fieldwork

The cemetery was delineated during February to May of 2012. The following discussion of the delineation will refer to the project map, included below as **Map 1**, and to **Table 1**, which contains important field data (including UTMs in NAD 83 for each grave) and information on the identities of the interred both from the tombstones and from family history. All four corners of the original cemetery boundary survey were located early in the field work. It was initially thought that the survey plat was drawn in 2002; hence this date is found on the smaller of the two rectangles (in green) on the project map. Recent title research



Map 1. The Minshew-Thomas-Sullivan Cemetery

Table 1. Minshew-Thomas-Sullivan Cemetery Data

Grave Number	Name	Marked/Unmarked*	UTM Easting (X)	UTM Northing (Y)
1	Robert Proctor	Unmarked	256740.4113	3615582.983
2	Sarah (Sally) Watson Sullivan	Marked	256728.0077	3615539.985
3	Thomas Osborn Sullivan, CSA	Unmarked	256734.2118	3615571.669
4	Son of Thomas and Sarah Sullivan	Unmarked	256733.7309	3615565.583
5	Son of Thomas and Sarah Sullivan	Marked	256721.6631	3615572.563
6	Minnie Cobb Rogers	Marked	256733.7836	3615559.613
7	Unknown	Unmarked	256742.8252	3615567.787
8	R. A. Thomas	Unmarked	256725.92	3615569.661
9	Unknown	Marked	256729.4208	3615570.1
10	Unknown	Marked	256728.8588	3615569.202
11	Unknown	Marked	256729.8111	3615541.011
12	Unknown	Marked	256727.9765	3615540.899
13	Unknown	Unmarked	256740.2064	3615544.735
14	Unknown	Unmarked	256745.254	3615543.716
15	Elizabeth Minshew	Marked	256715.9927	3615534.614
16	Nathan Minshew	Unmarked	256744.0155	3615580.991
17	Unknown	Unmarked	256733.6445	3615564.59
18	Unknown	Unmarked	256740.7325	3615538.56
19	Unknown	Marked	256727.2114	3615548.59
20	Unknown	Marked	256729.7499	3615539.775
21	Unknown	Marked	256727.9501	3615539.048
22	Unknown	Unmarked	256735.1531	3615581.79
23	Unknown	Unmarked	256741.5429	3615554.696
24	Lizzie Hutto	Unmarked	256746.6497	3615564.992
25	Walter Hutto	Unmarked	256740.8773	3615575.299
26	Frank S. Sullivan	Unmarked	256726.5496	3615540.993
27	Mrs. F. S. Sullivan	Unmarked	256746.3738	3615579.853
28	Ernest F. Sullivan	Unmarked	256719.8608	3615552.472
29	Unknown Sullivan child	Unmarked	256722.9339	3615552.417
30	Elizabeth Self Sullivan	Unmarked	256734.6504	3615577.749
31	Anna Hoskins	Unmarked	256746.5099	3615581.002
32	Betty Jean Fincher	Unmarked	256743.3154	3615574.389
33	Unknown Confederate Soldier	Marked	256726.9272	3615546.135
34	Unknown	Unmarked	256742.5237	3615569.044
35	Unknown	Marked	256729.3911	3615536.807
36	Unknown	Unmarked	256728.8322	3615566.836
37	Unknown	Unmarked	256728.1025	3615542.725
38	Unknown	Unmarked	256729.415	3615571.837

Grave Number	Name	Marked/Unmarked*	UTM Easting (X)	UTM Northing (Y)
39	Unknown	Unmarked	256746.5909	3615563.552
40	Unknown	Unmarked	256729.0389	3615567.861
41	Unknown	Marked	256729.8198	3615542.317
42	Unknown	Marked	256729.6563	3615538.475
43	Unknown	Unmarked	256739.9254	3615542.79
44	Unknown	Unmarked	256732.1906	3615536.608
45	Unknown	Unmarked	256725.9022	3615570.908
46	Unknown	Unmarked	256722.8398	3615551.132
47	Unknown	Unmarked	256733.8405	3615563.13
48	Unknown	Unmarked	256734.8515	3615579.122
49	Unknown	Unmarked	256744.6008	3615548.046
50	Unknown	Unmarked	256734.7762	3615580.439
51	Unknown	Unmarked	256741.643	3615564.356
52	Unknown	Unmarked	256746.0528	3615574.563
53	Unknown	Marked	256723.2352	3615571.059
54	Unknown	Unmarked	256748.5414	3615560.344
55	Unknown	Unmarked	256742.5126	3615571.243
56	Unknown	Unmarked	256740.6083	3615574.371
57	Unknown	Marked	256728.0017	3615541.75
58	Unknown	Unmarked	256744.6255	3615545.816
59	Unknown	Unmarked	256719.6684	3615551.305
60	Unknown	Unmarked	256740.9027	3615576.442
61	Unknown	Unmarked	256726.6982	3615573.264
62	Unknown	Marked	256727.1217	3615547.328
63	Unknown	Unmarked	256723.7019	3615574.262
64	Unknown	Unmarked	256745.2878	3615550.55
65	Unknown	Unmarked	256744.9104	3615548.984
66	Unknown	Unmarked	256746.3414	3615582.181
67	Unknown	Unmarked	256740.0094	3615540.286
68	Unknown	Unmarked	256740.6619	3615547.221
69	Unknown	Unmarked	256723.0381	3615567.875
FT1**	Unknown	Unmarked	256729.6572	3615530.583
FT2	Unknown	Unmarked	256724.4819	3615529.891
FT3	Robert Proctor's Mother?	Unmarked	256715.6869	3615532.751
FT4	Robert Proctor's Mother?	Unmarked	256715.8792	3615536.144
FT5	Unknown	Unmarked	256732.8533	3615549.902
FT6	Unknown	Marked	256726.9951	3615578.913
FT7	Unknown	Unmarked	256719.9653	3615553.841
FT8	Unknown	Unmarked	256723.2553	3615555.995

***** The Marked/Unmarked column denotes any marker of any kind, including concrete slabs, bricks, or headstones

** Grave numbers FT1-8 (below number 69) are those reported by Mr. Sullivan according to Family Tradition (FT), and could not be verified through archaeological probing.

has shown that this survey was actually performed in 1979 for the Georgia Department of Natural Resources. Mr. Arthur Sullivan, Sr. also provided a copy of the more recent survey he had performed in 2006, and all four corners shown on this plat were also located on the ground. As the map indicates, these two surveys share their southeastern and southwestern corners, but the other two corners differ considerably. Mr. Sullivan also pointed out the locations of graves according to family tradition, and while these areas were carefully tested with the probe rod, nothing was found that would have indicated graves in these areas. Despite this result, it is always important to utilize oral tradition as much as possible, so these graves are also depicted on the project map. These include eight individual graves (depicted in yellow and numbered 1-8 on the map, and numbered as Family Tradition [FT] 1-8 on the table), as well as three other areas where multiple graves were reported. These three areas are depicted in the map by the rectangles containing red, blue, and green stripes. Of the yellow numbered graves, only one individual grave could be identified. Although Mr. Sullivan was unsure which one, either Grave 3 or 4 (in yellow) represents the location of the grave of Robert Proctor's mother, and was the last burial identified in the cemetery.

Eighteen marked graves were located. Some of these had names and/or other information on them, and some had no information of any kind. During the process of delineating the cemetery, 51 previously unknown graves were documented, including some with concrete slabs and others with brick edging that were covered with leaves or pine straw. The vast majority of these graves were located with the probe rod, and had no marker of any kind associated with them, including 14 graves located north of the presumed cemetery boundary. Several of these were north of the proposed 20-foot buffer.

The Minshew-Thomas Plot, in the northeastern part of the cemetery, contained four marked and eight other previously undocumented graves (Graves 6-17) within a wrought iron fence **(see Figure 5)**. A large number of cola bottles were found in the northeastern corner of this plot and outside the fence to the northeast. It is unknown at this time if this represents something cultural or merely an old bottle dump, but the latter is more likely. The Sullivan Plot, in the south-central part of the cemetery, contained nine marked and three other previously undocumented graves (Graves 18-29) within a wrought iron fence **(see Figure 4)**. The identities of individuals interred in seven other marked graves (Graves 2-5, 30-32) were provided by Mr. Sullivan. The remainder of the graves was located outside of these fenced plots, and are mostly unknown (Graves 33-69) **(see Figure 6)**. Four large trees, identified in the map legend as "relevant flora," are also depicted on the map because they are among the largest trees in the cemetery and were used in reference to grave locations during verbal interview, primarily with Mr. Sullivan.

Most of the previously undocumented graves were situated in the eastern half of the cemetery (Graves 33-69), and extended northward towards the trash dump, a debris pile which consisted of an extensive area where bricks, tires, sheet metal, concrete, farm equipment, car parts, and other debris were dumped during the last 50 years. City workers used a backhoe to push the central portion of the debris up into a trash pile (depicted in gray on the map) so that probing could be performed in this area. Although the remaining debris prevented successful probing, Mr. Sullivan also reported graves in this most northerly portion of the cemetery. He said that his father told neighbors and family members not to bury anyone outside the old wire fence line (represented by the northern line of his 2006 survey plat), but some people did not listen and buried an unknown number of infants in the area now covered by a trash dump **(see Figure 7)**. This area is depicted on the map by the green striped rectangle.



Figure 4. The Sullivan Plot, Showing Base Fence in Background, view southwest



Figure 5. The Minshew-Thomas Plot, view northwest



Figure 6. Flags Marking Locations of Unmarked Graves, view southwest



Figure 7. Trash Pile and Area of Infant Graves, view southeast

Recommendations

Recommendations for the City of Warner Robins

Further field work is still needed to establish the northern boundary of the Minshew-Thomas-Sullivan Cemetery. The trash dump covering this part of the cemetery should be removed carefully according to the following methodology, so the delineation can be completed. A backhoe is the primary tool recommended for removing the trash dump, since it can be a satisfactory archaeological excavation tool when equipped with either a bucket lacking teeth (a flat, straight digging edge), or the temporary addition (i.e., spot welding) of a section of grader blade that is the width of the bucket and that entirely covers and extends beyond the leading edge of the bucket teeth. A backhoe bucket equipped with a straight cutting edge, or one that is modified as described above to have a straight cutting edge, will produce a smooth cut across the soil when skimmed, and will allow for the careful removal of the majority of the debris.

Removal of the debris will also necessitate removing some material that has already begun to sink into the ground, so it is recommended that after most of the easier-to-remove debris is out of the way, the backhoe operator should carefully strip off the grass in the debris field in order to expose other material that has already sunk into the ground. This will also make it quite easy to see dark stains, or features, in the top layer of soil, and a professional archaeologist can determine if these dark stains are graves or not, and record them as such if necessary. The removal of sunken debris with a backhoe should proceed slowly and carefully under the supervision of an archaeologist, not disturbing soil in excess of three inches as each pass is made along the full reach of the backhoe arm. If the archaeologist identifies a feature, or probable grave, during the backhoe skimming of the grass, the operator must cease immediately in order to permit an assessment of the feature. Some combination of probing and remote sensing is also recommended in this area after the trash dump has been removed.

It is also recommended that the city hire an experienced real estate attorney to perform a more detailed title search regarding the one-acre cemetery reservation. Because the 1847 deed specifically reserved one acre for the cemetery, and no later deeds were found that mentioned this fact, there is some legal question as to the current ownership of the cemetery. Fee simple (absolute ownership) to this one-acre reservation may indeed be held by the City of Warner Robins, but every effort should be made to locate other deeds to verify this. The legal question to answer in the absence of more recent deeds specifically mentioning the cemetery is whether adverse possession (“a method of acquisition of title to real property by possession or a statutory period under certain conditions”) under color of title (“that which is a semblance or appearance

of title, but is not title in fact or in law") can or cannot run against a cemetery (Black 1979:49, 24; James M. Preston, Cadastral Land Surveyor, personal communication, May 17, 2011).

Until further field work can clarify the possible existence of graves in the northern portion of the cemetery, and until a more detailed title search can clarify the question of ownership of the cemetery reservation, it is recommended that the City of Warner Robins protect an area slightly larger than one acre in size. The orange line on the project map depicts the presumed one acre parcel reserved by the 1847 deed, based on the findings of this delineation and the two survey plats. Since the 2006 cemetery plat extends approximately 20 feet east of the common boundary between Land Lots 230 and 234, it is further recommended that the protected area be extended to the eastern boundary of the 2006 survey. This line is also shown on the project map (in blue), and is easy to locate since it includes the north-south measurement of 185.42 feet.

Recommendations for Robins AFB

A number of studies have found that historical cemeteries were purposely placed on property lines, probably to maximize available agricultural land and to keep from having to farm around graves. While this is true across the South, and probably across the nation, there are specific examples from northern Alabama and middle Georgia that can be cited. For instance, Bankhead National Forest in northwestern Alabama has examples of this type of cemetery placement (Jefferson M. Thomson, personal communication, May 18, 2012). There are also examples of this closer to home in middle Georgia. A recent cemetery relocation project in southern Bibb County, just a few miles north of the project area, revealed that the Avondale Burial Place was situated along land lot lines (Matternes et al. 2012). And the Parker Cemetery, which was removed from Robins Air Force Base in 1952, was situated at the common corner of four land lots (Hammack 2011: Figure 17).

Although the southern-most grave reported at the Minshew-Thomas-Sullivan Cemetery is 18.25 feet from the Robins AFB property line and 25.86 feet from the Base perimeter fence, as depicted in the Base Geographic Information System (GIS), it is 28.9 feet from the corner of the four land lots. According to early installation records, Land Lot 230 was not included in the original land bought by the City of Macon and given to the U.S. Government (McConnell 1944: Appendix 2). Because the cemetery was situated at the corner of four land lots, as stated in the 1847 deed of sale, this means that the Base boundary line is 10.65 feet north of its correct physical location on the land lot line. It also means that there could be additional graves all the way down to or even south of the actual land lot corners, inside the current fence line.

It is therefore recommended that Robins AFB investigate this area archaeologically in order to determine whether any graves associated with the Minshew-Thomas-Sullivan Cemetery are on Base property. The use of the multiple methodologies of probing, Ground Penetrating Radar, and magnetometry, which were used in a previous Base cemetery project, would offer the best results (Hammack et al. 2008). If additional graves relating to the Minshew-Thomas-Sullivan Cemetery are located on installation property in the future, then they should be protected according to the guidelines specified in the Base's recent Cemetery Preservation Plan (Hammack 2011).

Recommendations for the EA

Once this report is reviewed and approved by the relevant personnel at both Robins AFB and the City of Warner Robins, it will be submitted by Robins AFB to the Georgia State Historic Preservation Office (SHPO) for a 30-day review period, as stated in the mitigation plan. Upon the receipt of a letter from the SHPO concerning the report, the City will be informed and provided with a copy of this letter. It is recommended that both the letter and the full archaeological report be included as an appendix in the next revision of the EA by the City's contractor (AMEC), and that the text of the EA also be revised to include the recommendations of this report.

Acknowledgments

This project could not have been conducted without the participation of several individuals. First and foremost, Arthur Sullivan, Sr., his wife Betty, and son Arthur Sullivan, Jr. were kind enough to meet at the cemetery, share family traditions concerning the cemetery, point out where unmarked graves are located, and provide copies of family records and the 2006 cemetery plat. Second, Warner Robins Assistant City Engineer Charles Beauchea provided access to the cemetery multiple times, and also assisted in the field with the location of survey pins. Third, the Robins AFB survey crew, consisting of Jim Hurst, Krista Mott, and Josh Winters recorded GPS points for all the graves and other points shown on the project map. And finally, Krista Mott used her considerable GIS talents in creating the wonderful map, thereby making it the centerpiece of this project and this report. To all of these individuals a vast debt of gratitude is due. Further, the project would not have been possible without the funding provided by the 78 CEG.

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